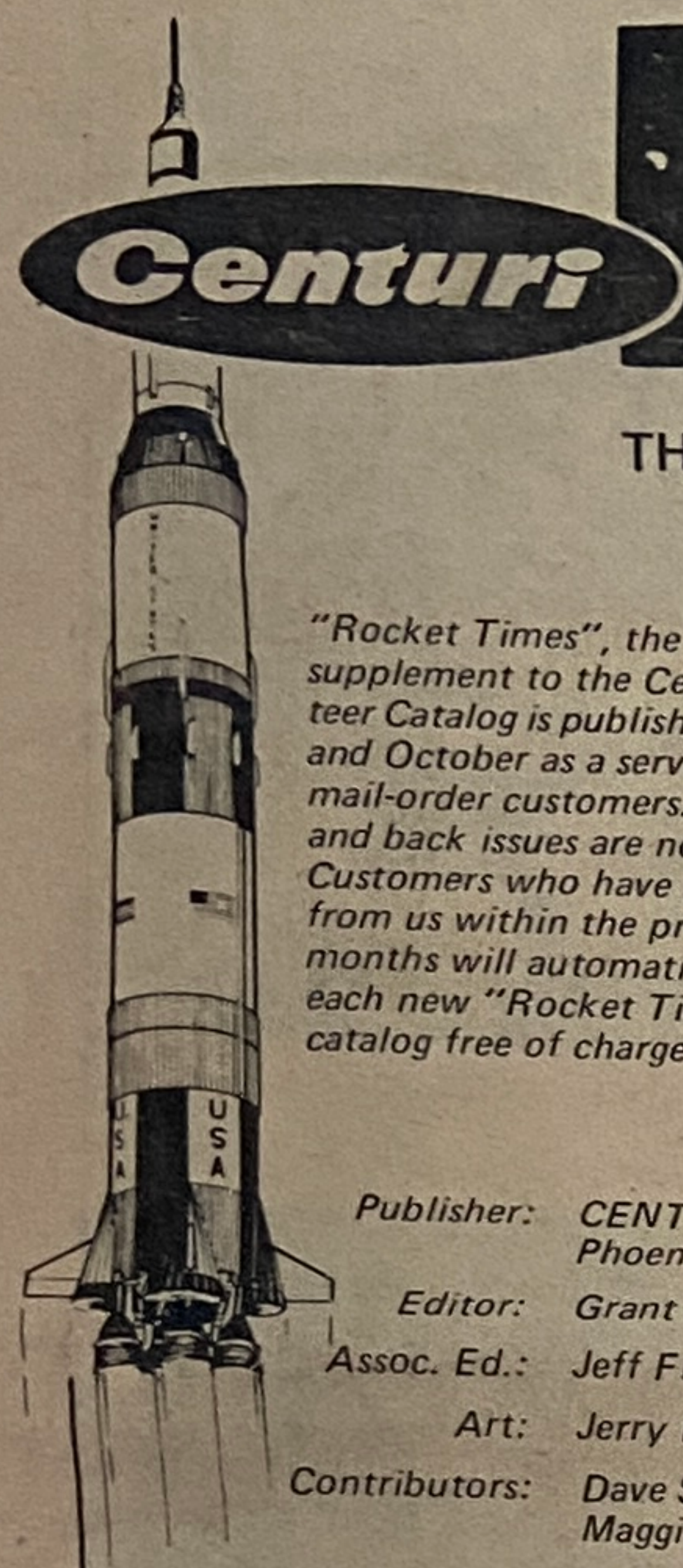


Includes **NEW** 1978 catalog
PULL IT OUT OF THIS "ROCKET TIMES." MAIL ORDER INFO ON PAGE "G".



Rocket Times

THE OFFICIAL CENTURI MODEL ROCKET MAGAZINE OF FACTORY DIRECT NEWS

1978
SPRING/SUMMER
SUPPLEMENT TO
CENTURI CATALOG #781-R
Total Value: 50¢

"Rocket Times", the magazine supplement to the Centuri Rocketeer Catalog is published in January and October as a service to our mail-order customers. Subscriptions and back issues are not available. Customers who have mail-ordered from us within the previous 12 months will automatically receive each new "Rocket Times" and catalog free of charge.

Publisher: CENTURI, Box 1988,
Phoenix, AZ 85001
Editor: Grant Boyd
Assoc. Ed.: Jeff Flygare
Art: Jerry Ramsey
Contributors: Dave Smith
Maggie Conlon

Editorial

Welcome, rocketry buffs, to another issue of R.T. This issue is chock full of exciting articles, photos and plans, but first, a short comment. Suppose you wanted to make up a very silly story. Suppose after 20 years of safe, reliable, successful model rocket flights, some bureaucrat came along and decided it would be a good idea to put bright orange labels on the side of every shipment of model rocket engines. Suppose he knew so little about the safety record of the hobby that he chose the most alarming design for the label that he could find, an exploding cannon ball. Suppose that all the manufacturers spent weeks writing letters trying to demonstrate to this official how wrong he was and he still turned around and made everyone put the labels on the boxes of rocket engines. Now wouldn't that make a funny story friends?

Well, don't laugh too hard because it's true. The Department of Transportation has ruled that we (and all other model rocket engine manufacturers) must place the pictured large orange label on every shipment of rocket engines. We're sure you realize that a label of this type isn't needed. Many of your friends who don't know much about the hobby, to say nothing of parents and teachers, may get the wrong idea about the hobby from seeing this kind of label. We hope that you'll spread the word even more than you have in the past that model rocketry is a safe, fun hobby enjoyed by millions of people each year. What the hobby doesn't need is more regulations. What it does need is more modelers like our customers, who know model rocketry is fun and safe!



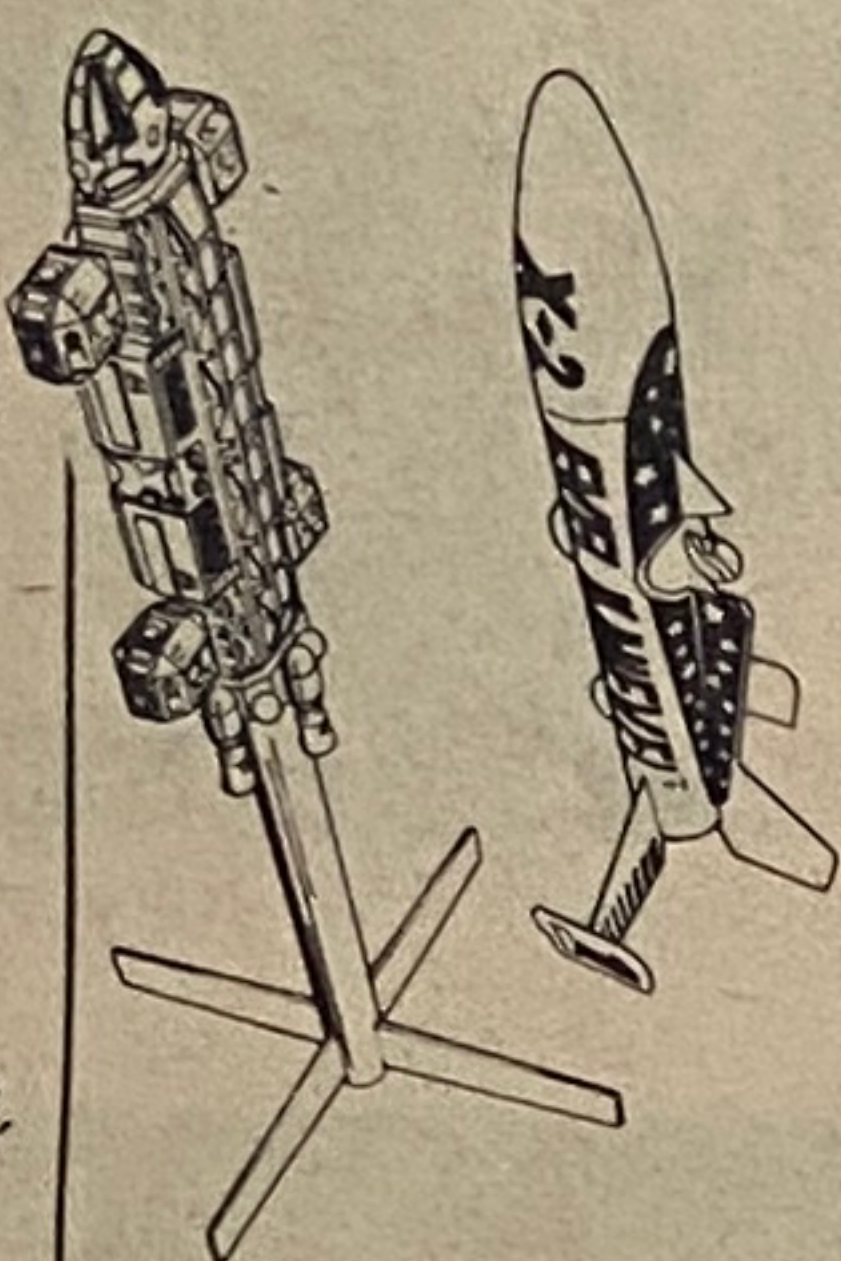
Back at the launch pad



LITTLE JOES: There's still a few left! If you missed your chance to get one of the few remaining 1/45 Little Joe II's last year during our close-out, rejoice! As stated in the last RT, we found almost 300 more during our summer inventory. Because it was our mistake, we're extending the sale on these kits, so you can capitalize

on our goof and get the beautiful Centuri "1/45 Little Joe II", a \$19.00 value, for the 1969 pre-inflation price of only \$12.95! Just indicate your choice in the appropriate place on the order form on page G.

CANADA. Good news for Centuri rocketeers in Canada. Most Canadian rocketeers are now able to purchase Centuri rockets at their local hobby shop with far less "red tape" than by mail ordering from the U.S. If your local hobby dealer doesn't yet carry Centuri products, encourage him to contact our Canadian importer: International Games of Canada, Ltd., 3227 Lenworth Drive, Mississauga, Ontario, Canada L4X 2G8. For more information on Canadian model rocketry, see page 3 of the 1978 Centuri catalog.



Eagle Transporter kit or the Evel Knievel Sky Cycle kit, and build it, changing the basic design of the kit in some manner. As the rules state, you can add just about anything to the kit, as long as it doesn't break the Rocketeer's Safety Code (no metallic parts or other things that might be dangerous). Then, send us a picture and tell us what you've done to the kit. We'll choose the winners in each category, and, along with receiving the prizes listed below, the first place entries will have the pictures of their rockets printed in the next issue of Rocket Times. So go get those Centuri kits and start bashing!

PRIZES (TOTAL VALUE OVER \$200!)

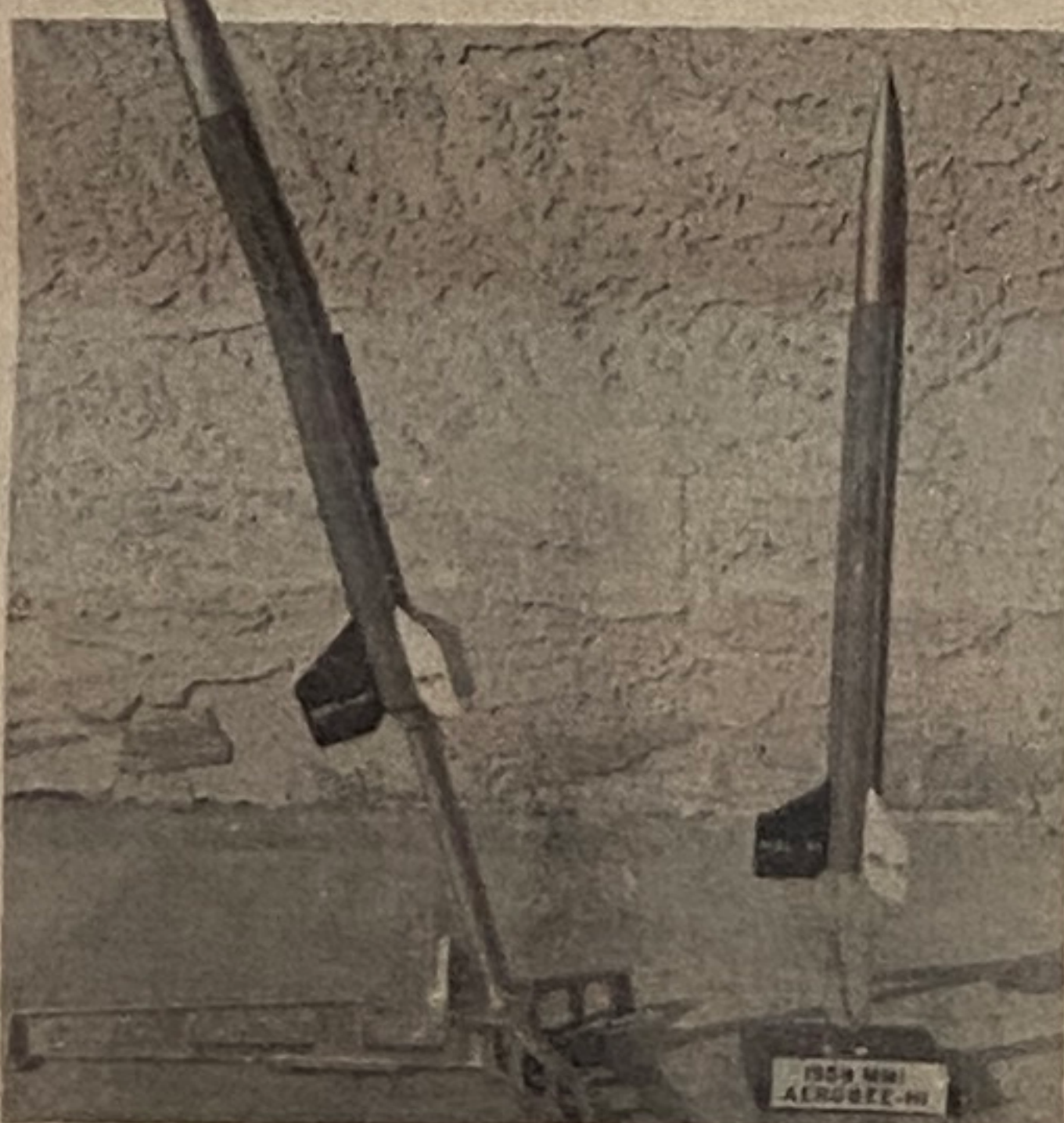
Space: 1999 Eagle Transporter Category
1st Place: Saturn V Super Scale kit
2nd Place: Saturn 1B Super Scale kit — 3 winners!
3rd Place: Super Kits — 6 winners!

Out in the field

MODEL ROCKETRY'S 20th ANNIVERSARY

We thought the best way to celebrate model rocketry's 20th birthday would be to publish this photo of the world's first model rocket kit. The photo shows the Aerobee-Hi kit made by Model Missiles, Inc. (below right), as well as a similar rocket built out of Centuri parts (below left). Model Missiles isn't around anymore, and neither are their kits, but you can use the plan below to build a replica of the model.

The original MMI kit was patterned after the actual Aerobee-Hi sounding rocket flown extensively for research purposes in the late 1950's. The MMI kit used a maple nose cone and a convoluted wound paper tube. The model built from Centuri parts uses a Centuri #8 body tube and a PNC-89 nose cone. The fins and shroud strips are made from 3/32" sheet balsa (BFM-10) and the engine mount is an EM-8. You'll also need a launch lug (LL-3), a shock cord (SC-18), a shock cord fastener (SCF-1) and a parachute (CP-12).

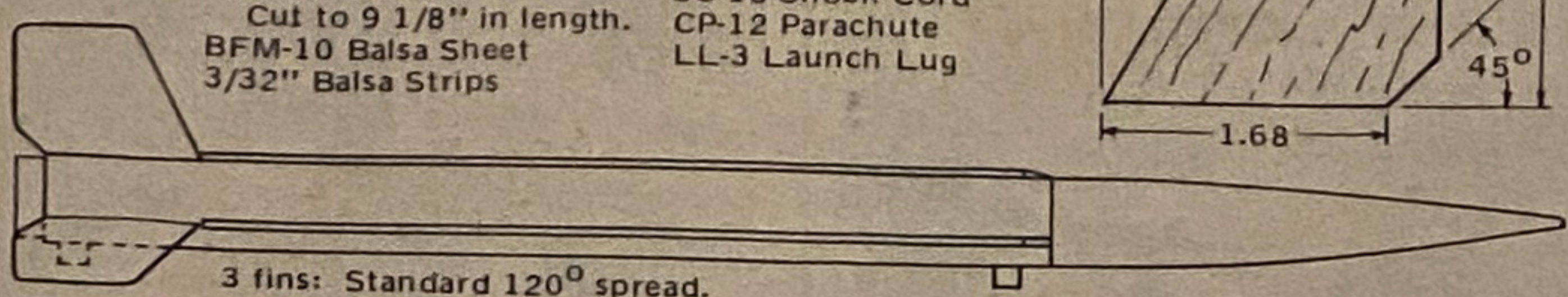


The models provided for the photo and the plans were supplied by G. Harry Stine who, besides authoring the Handbook of Model Rocketry and The New Model Rocketry Manual (see page F and Book Review), started the National Association of Rocketry and is currently the editor of the NAR's magazine, the Model Rocketeer. Mr. Stine also started the first model rocket company, Model Missiles, Inc. in 1957. We are grateful to Mr. Stine for helping us to prepare this information for our readers.

PARTS LIST

PNC-89 Nose Cone
ST-8 Body Tube
Cut to 9 1/8" in length.
BFM-10 Balsa Sheet
3/32" Balsa Strips

EM-8 Engine Mount
SC-18 Shock Cord
CP-12 Parachute
LL-3 Launch Lug



3 fins: Standard 120° spread.

Modeling Contest

"KNEAGLE" KIT BASHING CONTEST

Centuri's newest contest gives you the opportunity to have fun building and bashing two of Centuri's most exciting kits and win prizes too! To enter the Centuri "Kneagle" Kitbashing Contest, just purchase either the Space: 1999

Evel Knievel Sky Cycle Category
1st Place: Saturn 1B Super Scale kit
2nd Place: Super Kits — 3 winners!
3rd Place: Fighter Fleet Kits — 6 winners!

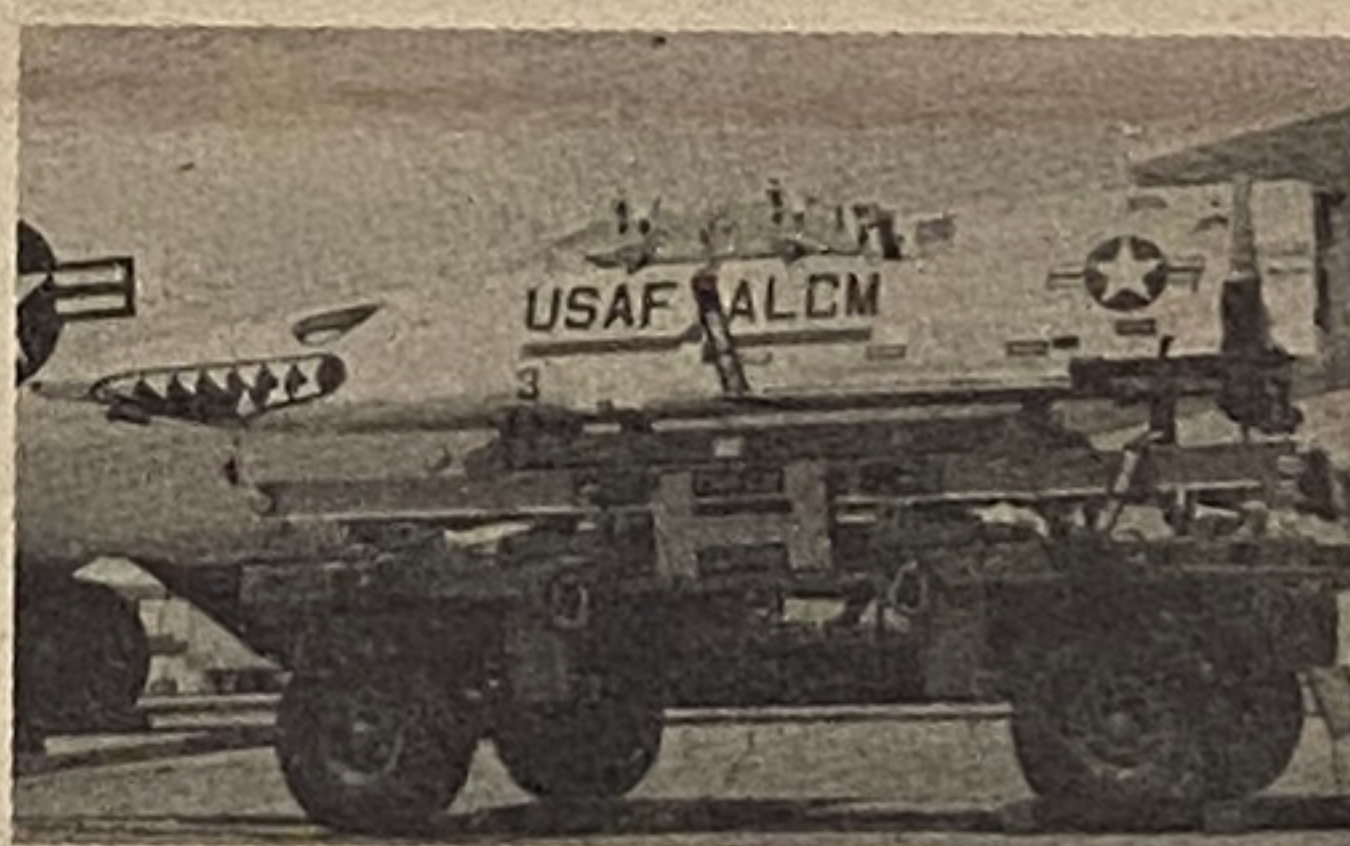
RULES

1. All entries must use the Centuri Space: 1999 Eagle Transporter or Centuri Evel Knievel Sky Cycle kit to start with.
2. Pieces may be added from any source as long as they qualify as parts which can be used on a model rocket under the Model Rocketeer's Safety Code (see page 3 of the Centuri catalog).
3. The entry must be capable of flight.
4. The contestant must submit at least one clear, reproducible photo of the model, as well as a written explanation of the changes made to the kit. Do not send model.
5. Entries will be judged on originality, appearance, practicality and imagination.
6. The deadline for entries is August 31, 1978.
7. Decisions of judges are final.

All entries should be submitted to:

"Kneagle" Kitbashing Contest
Centuri
P.O. Box 1988
Phoenix, AZ 85001

Space & Sky



CRUISE MISSILE. Centuri's newest product is a scale model of the Boeing ALCM Cruise Missile. The real Cruise Missile is designed to be launched from a large aircraft such as the B-52 or C-5A Galaxy. When stored in the aircraft, the fins and wings are folded. Once launched, they unfold and the ram-jet engine is activated. A sophisticated guidance system then allows the Cruise Missile to fly at altitudes as low as 50 feet and to follow the terrain until it reaches its target.

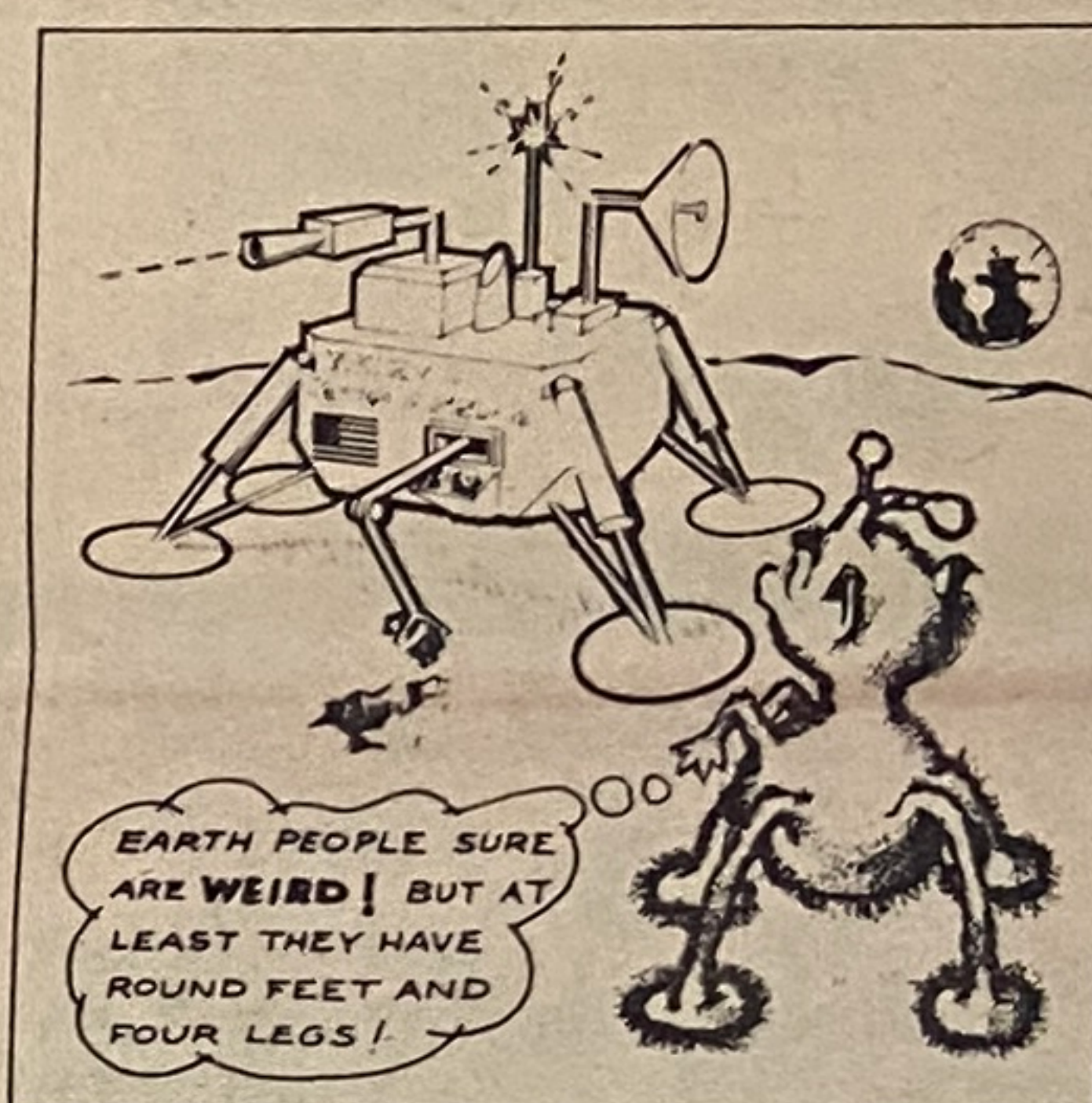
Science Fiction

FUTURE MAGAZINE. There's a new science fiction oriented magazine called Future; from the same people who bring you Starlog. It promises to be just as exciting as its sister magazine. Future features the exploration of our planet and of space, the science and technology that will make the future possible and the science-fiction visionaries who point the way. A year's subscription is \$10.98 in the U.S. and Canada. From Future Magazine, Dept. C, 475 Park Ave. South, New York, NY 10016.

WHAT'S AN "IGUANACON?" It's the strange little name for a big event: the 36th Science Fiction World Convention. This annual bash, being held August 30 thru September 2, 1978, is where thousands of fans have loads of fun. For information write them (not us) at: Iguanacón, P.O. Box 1072, Phoenix, AZ 85001.

T.V. CHARIOT. Here's a magazine for fans of TV science fiction shows past & present. A sample copy of this well done amateur zine costs \$1.00, from: TV Chariot, Dept. C, Box 234, Mesa, AZ 85201.

Cartoon Contest



This issue's Cartoon Contest winner is Bruce Arikawa of Oxnard, CA. His "Mystery Prize" is a complete set of Centuri window banners. Want to see your cartoon published? Just draw a funny cartoon about model rocketry and send it to the Editor, "Rocket Times". Each issue we pick the one most suitable for publication and award a "Mystery Prize".

Book Review

The New Model Rocketry Manual, by G. Harry Stine. 123 pages, many photos, ARCO Publishing Company, New York, NY 1977. Paperbound, \$2.95.



The newest model rocketry publication is a revised version of G. Harry Stine's Model Rocketry Manual. Not to be confused with his more advanced Handbook of Model Rocketry, The New Model Rocketry Manual includes an extensive section on constructing model rockets. It covers such topics as types of glue, installing a motor mount, fins and tail sections, streamers, parachutes, painting, storage and carrying. Even the most experienced modeler can find something new here.

Stine's chapter on the model rocket motor gives all the basic information the novice needs to choose the right engine for his rocket. The chapter on model rocket motors is followed by extensive chapters on launch pads and controllers and how to fly your model rocket. For a person just starting in the hobby, this is a must book. You'll find hundreds of new ideas to help you have more fun flying rockets.

The New Model Rocketry Manual can be found in most school and public libraries. Major bookstores also stock the manual, or will order it if you request it.

Photo contest



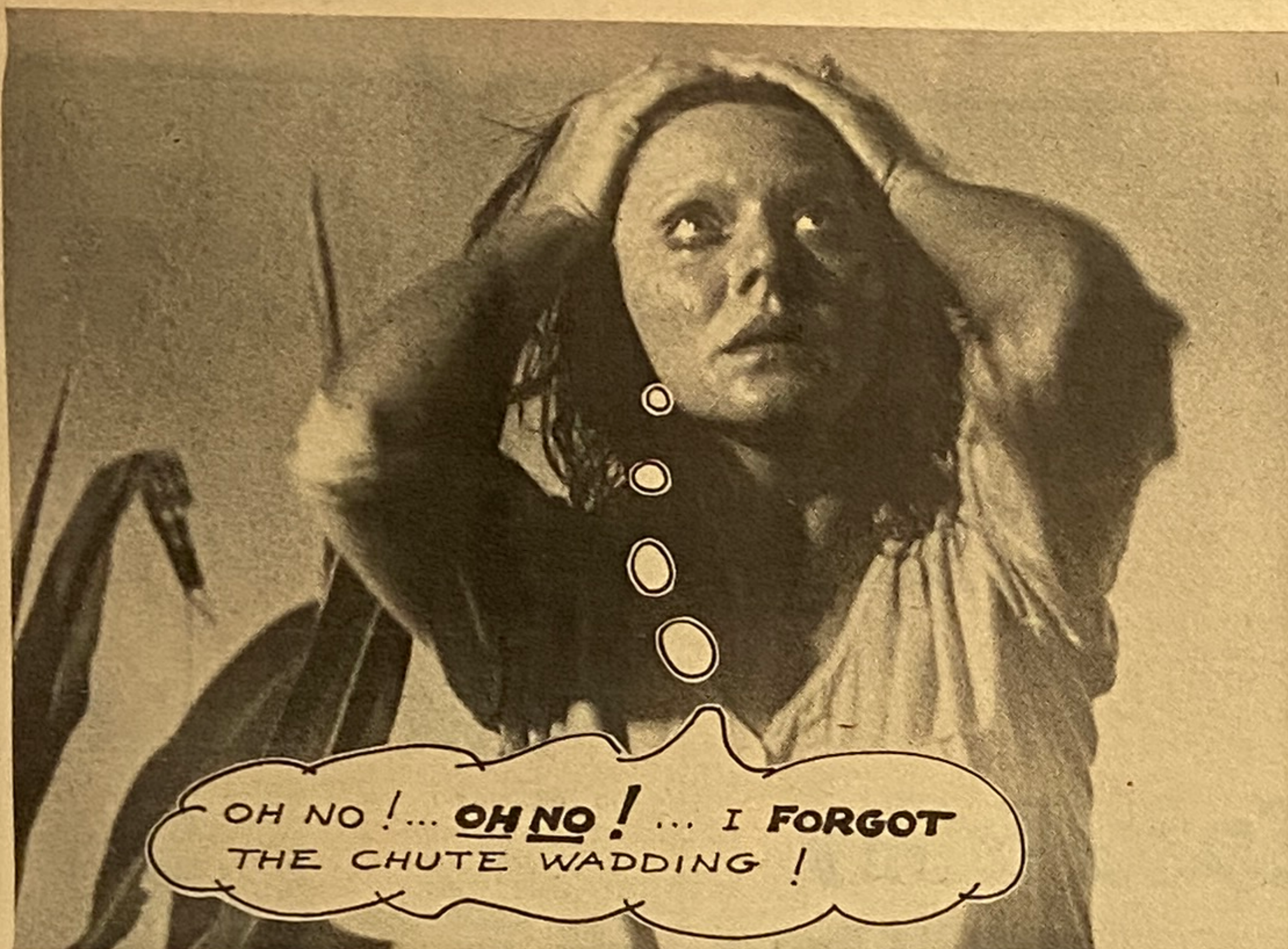
The winner of this issue's Photo Contest is Dave Simmons of Kildare, TX. Dave's photo of one of our Nomad kits with a supply train poised in front of it shows how clever some of our readers are. You can enter the Photo Contest too. The prize is a \$10 mail order certificate and a winner is picked for each issue of the Rocket Times. Send in your best photo about model rocketry addressed to Photo Contest, Rocket Times Editor. We can't return photos. Try for good contrast and sharp focus. Remember that people in the picture make it more interesting.

CLOSE ENCOUNTERS

OF THE THIRD KIND

"Close Encounters of the Third Kind" is the latest science fiction movie to follow on the heels of "Star Wars". So we thought it might be fun to take a look at the lighter side of this film about UFO's, first contact and aliens from space, like we did in the last issue with Star Wars. You may not understand some of the photos if you haven't seen the movie, and if you're not a rocketeer, you may not get some of the captions. So go see "Close Encounters of the Third Kind" and fly some Centuri rockets, too. Then, look out, because rocketeers can have "Close Encounters" too!

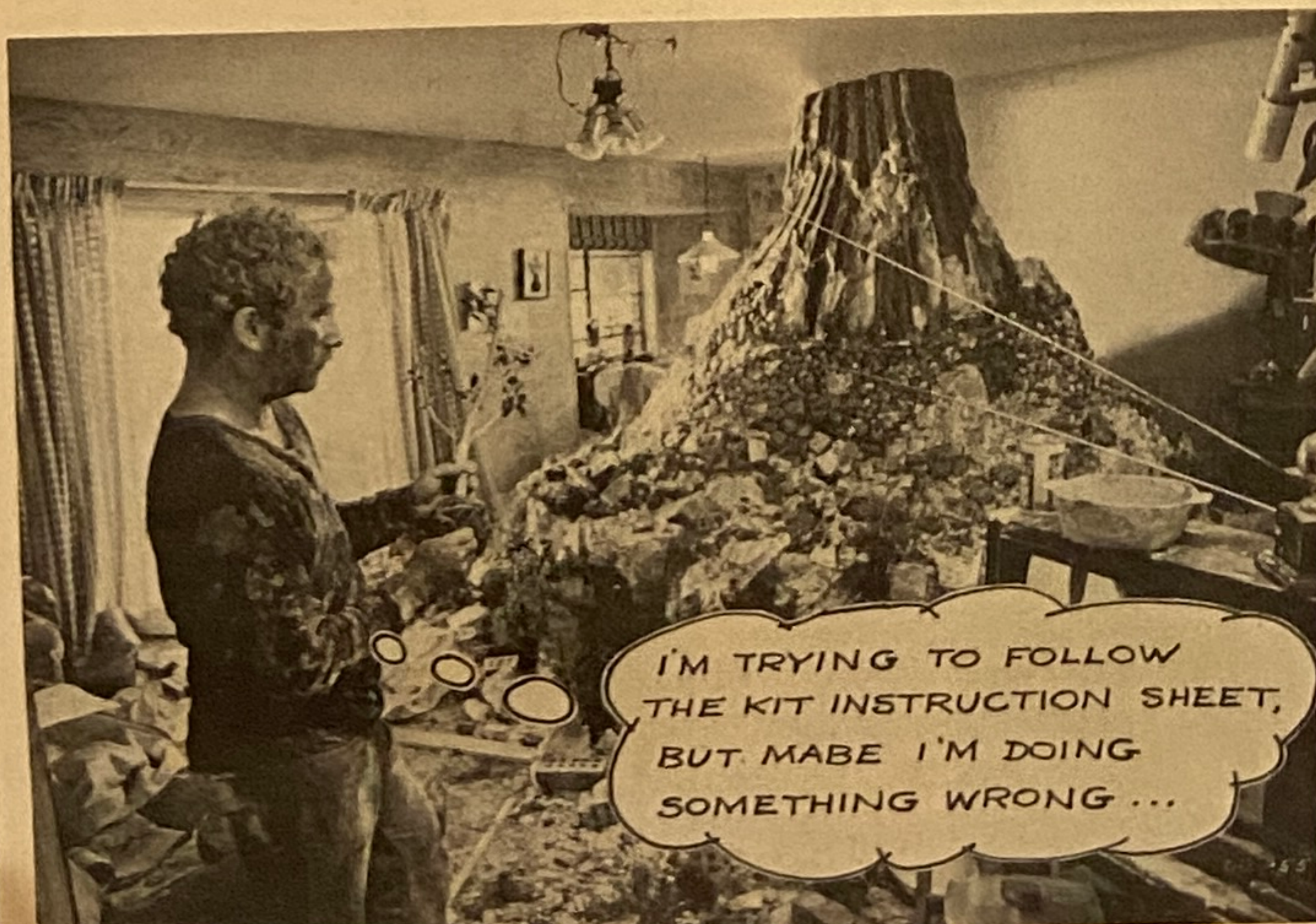
All photos © 1977 Columbia Pictures Industries, Inc.



Jullian Guiler searches for her son who seems to have been kidnapped.



In Bombay, India, thousands of Hindus chant the mysterious alien musical code.



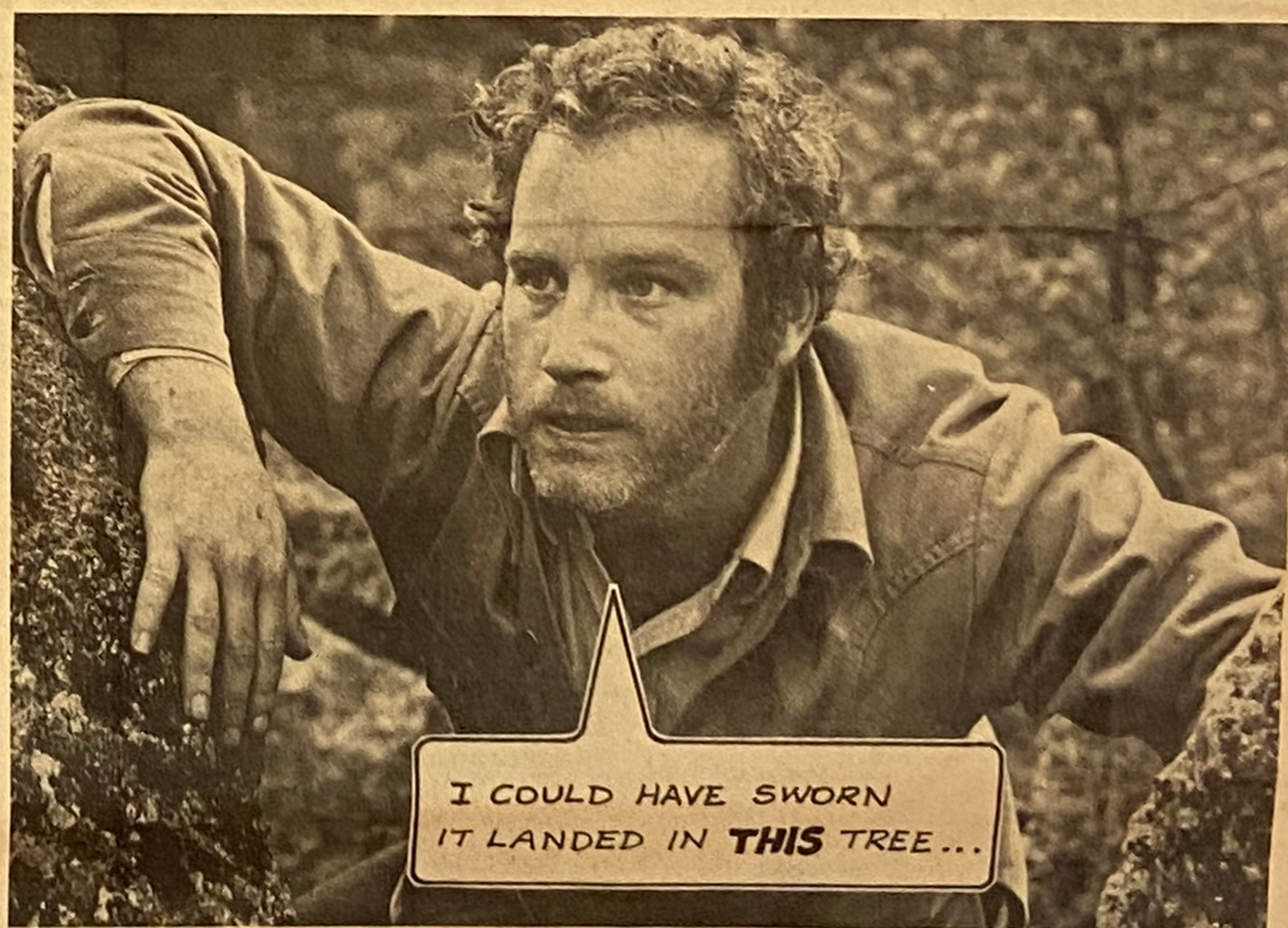
Roy Neary constructs a sculpture of Devil's Tower in his home.



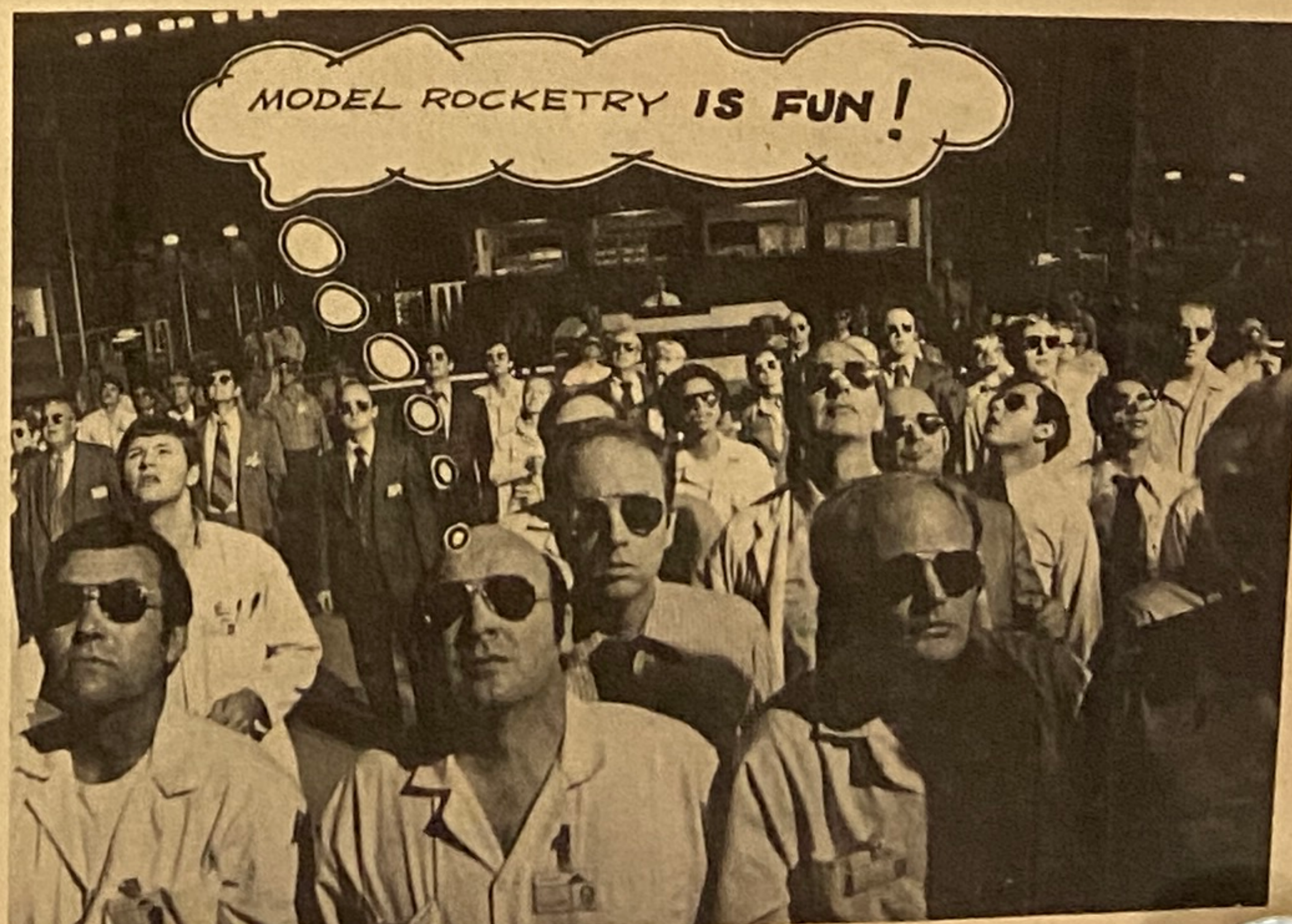
Jullian Guiler struggles to reach Roy Neary during a government evacuation.



French scientist Claude Lacombe questions Roy Neary about his close encounter.



Roy Neary reacts to a close encounter.



Members of the "silence group" await the arrival of the aliens.

SPECIAL INFORMATION ABOUT
NEW PRODUCTS... EXPLAINED
WITH A DIFFERENT "SLANT"
THAN IN THE CATALOG.

Centuri

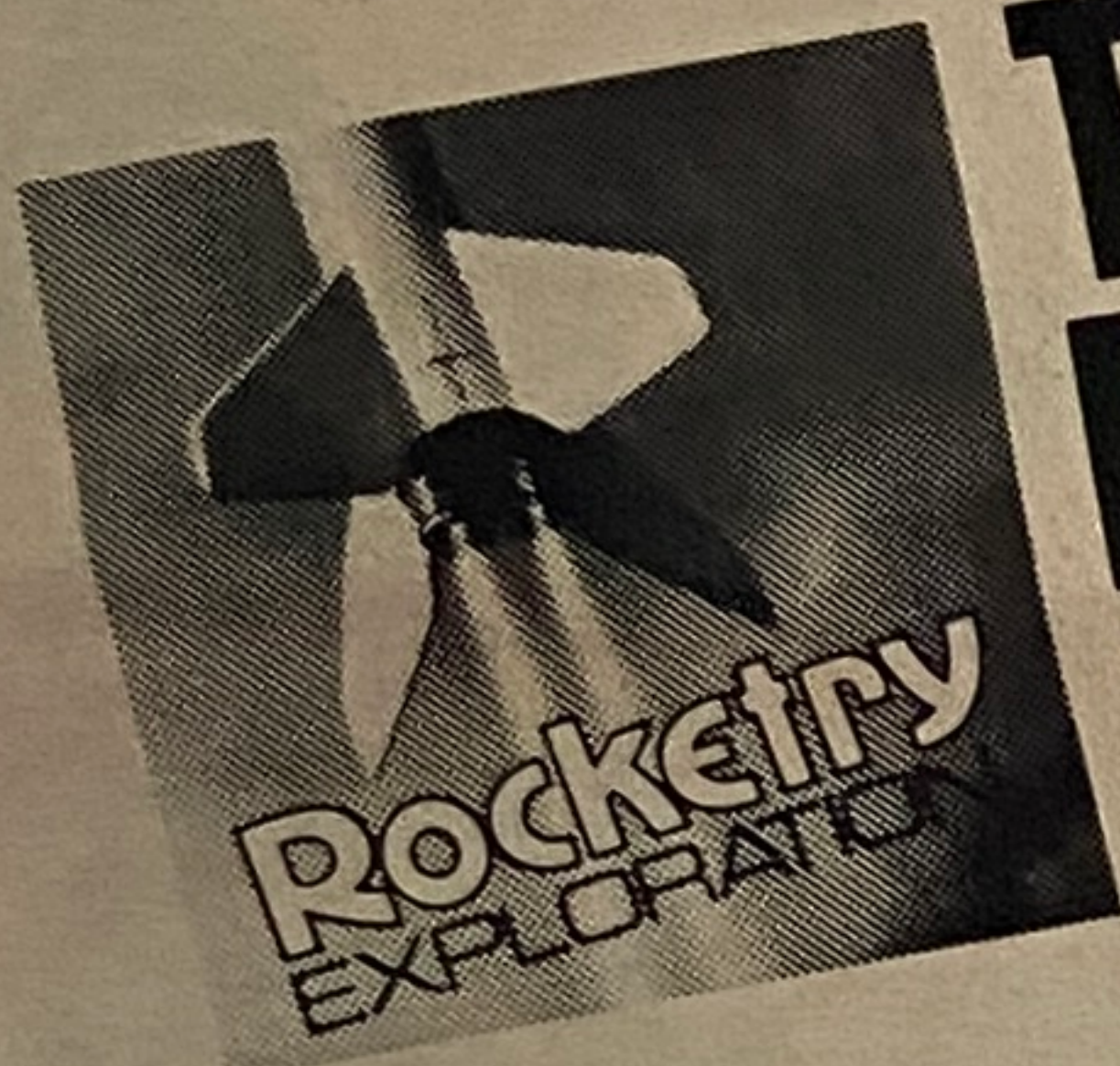
Showcase

Save Money: GOOD NEWS FOR ROCKETEERS!

Now you can save money on the Centuri POWER-SYSTEM by buying only the portions you need. The #5200 Outfit is designed for beginners; it includes a launch system, which most rocketeers already have. But now the POWER SYSTEM kit and other sub-assemblies are available separately, (by mail-order only) for experienced rocketeers to join in the fun!

ATTENTION NEWSLETTER EDITORS:
The Power-System Technical Information Report shown below is available free in reasonable quantities for inclusion in rocket club newsletters. Send sample issue and request the needed quantity from Jeff Flygare here at Centuri.

POWER-SYSTEM HANDBOOK Shown below and around the edges of this page are samples of this fascinating new publication. The real Handbook is a must for every rocketeer's library.



TECHNICAL INFORMATION REPORT

TIR-87 POWER SYSTEMS
Box 1988, Phoenix, AZ 85001

ROCKETRY EXPLORATION is a new concept; products designed for exciting learning about full-scale rocketry, using proven model rocket techniques and equipment.

POWER SYSTEMS is a carefully engineered series of learning, building and flying experiences; designed to take beginning and experienced rocketeers up thru advanced skill levels of rocket power.

- FLY A CLUSTER-ENGINE ROCKET
- INVESTIGATE RECOVERY SYSTEMS
- UNDERSTAND ENGINE SELECTING
- LEARN ROCKET TECHNOLOGY
- EXPERIENCE MULTI-STAGING
- STUDY ROCKET HISTORY
- MEASURE ALTITUDES
- LAUNCH PAYLOADS

POWER SYSTEMS Products are available two ways; as a complete outfit, and as separate sub-assemblies as explained at the right.

The **OUTFIT** is intended for beginning rocketeers who do not yet have a launch system, or for experienced rocketeers who are ready to upgrade to the heavy-duty launcher included in the outfit.

The **SUB-ASSEMBLIES** are intended for rocketeers who want to use only portions of the Power Systems series, without having to pay for unneeded equipment. All versions may be launched with most any 6 volt launch system, except the clustered RX-16 (configuration 7) which requires 12 volts. The Power-Control/Power Tower system included in the outfit handles all flights. The Handbook includes plans for an inexpensive 12 volt homemade launch system which rocketeers may build.

POWER SYSTEM HANDBOOK

Specially prepared Handbook/Operating Manual is the heart of the "Power System" series. Includes principles of rocket power, rockets in history and the movies, info on launchers, engines, construction and advanced projects. 24 pages and nearly 200 illustrations.

PROD. NO. 81527

\$1.00

POWER SYSTEM OUTFIT

Complete set; includes everything described below. \$30 value for only \$25.

PROD. NO. 5200 \$25.00

SUB-ASSEMBLIES

The 6 sub assemblies shown below are available separately, by mail order, directly from Centuri. The paperwork sub contains parts needed for both kits; you need it for completing either or both the X-7 and X-16 kits. There is an 85¢ postage and handling charge on all Centuri mail orders. Prices subject to change without notice.

X-7 SUB

The X-7 vehicle features high altitude flights, payload ability, multi-staging and choice of recovery systems. Contains parts for RX-7 rocket, PX-7 payload section, EX-7B booster unit, 12" chute, 16" chute, and streamer. (You will also need the Paperwork Sub).

PROD. NO. 87072

\$3.00

X-16 SUB

The X-16 vehicle is the model rocket industry's first kit to feature interchangeable "Plug 'N Go" engine mounts for single or double engine power. Contains parts for RX-16 rocket, PX-16 payload section, EX-161 single engine mount, EX-162 cluster engine mount, & 20" chute. (You will also need the Paperwork Sub, and a 16" chute... one is in the X-7 sub).

PROD. NO. 87073

\$6.00

PAPERWORK SUB

Includes Handbook (instructions), decals, mission symbols and other parts shared by the X-7 and X-16 rocket vehicles.

PROD. NO. 87075

\$2.00

FLIGHT SUB

Bargain-priced pack of the 12 engines required for all Power System projects, plus igniters, chute wadding and engine instructions. See types on chart at left.

PROD. NO. 87074

\$7.00

POWER TOWER

Tripod Launch Stand for use with the "Power-Control." Handles all model rockets sizes and types.

PROD. NO. 5601

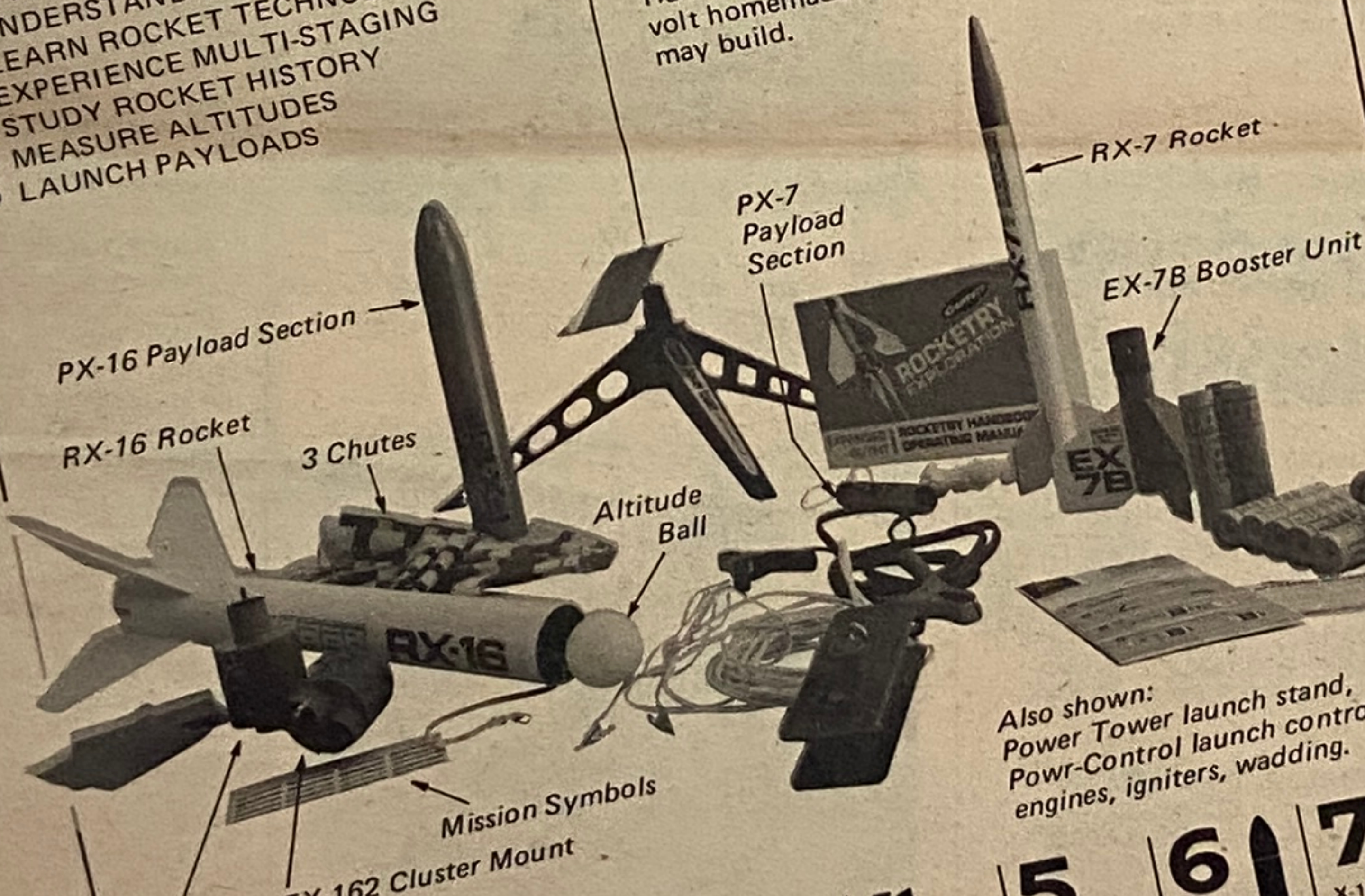
\$5.50

POWER-CONTROL

Launch Controller for use with the "Power Tower." Use with most any 6 or 12 volt battery.

PROD. NO. 5623

\$6.50



Also shown:
Power Tower launch stand,
Power-Control launch controller,
engines, igniters, wadding.

CONFIGURATION:

1
2 BASIC ROCKETS:
LENGTH: 12.4"

2

X-7
12.4"

3

X-7
12.4"

4

X-7
18.4"

5

X-16
17.2"

6

X-16
25.4"

7

X-16
25.4"

PX-16
BALL

PX-16
BALL

PX-16
BALL

PX-16
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SKILL LEVEL

1 Beginner
2 Intermediate
3 Advanced
4 Advanced
5 Advanced

4 SKILL LEVELS:
9 FLIGHTS:
7 PROJECTS:
12 ENGINES:
RECOVERY:

1 One Duration B6-6 16" Chute

2 One Altitude C6-7 Streamer

3 One Staging B6-0 & B6-6 (Choice)

2 One Basic B4-4 16" Chute

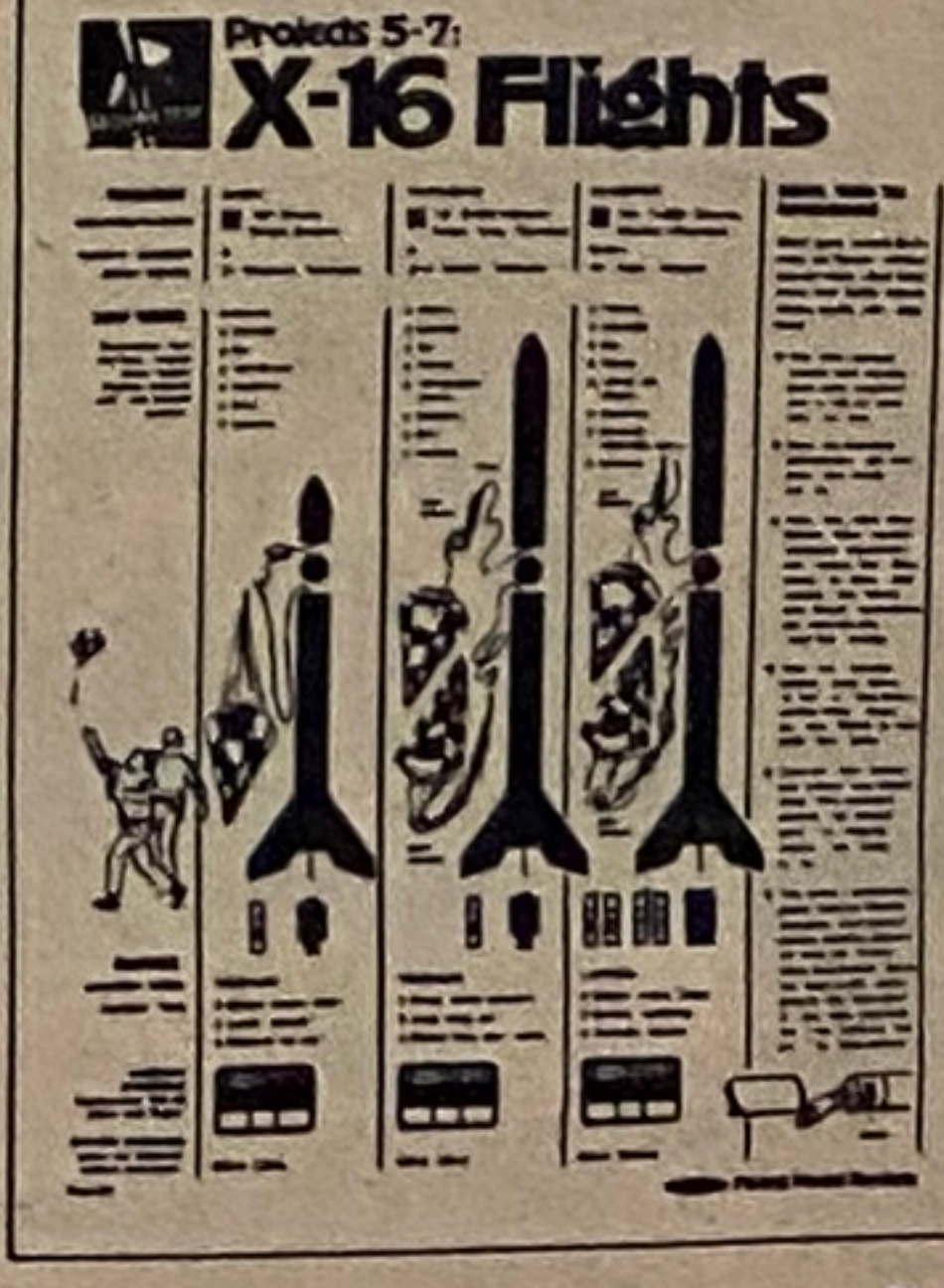
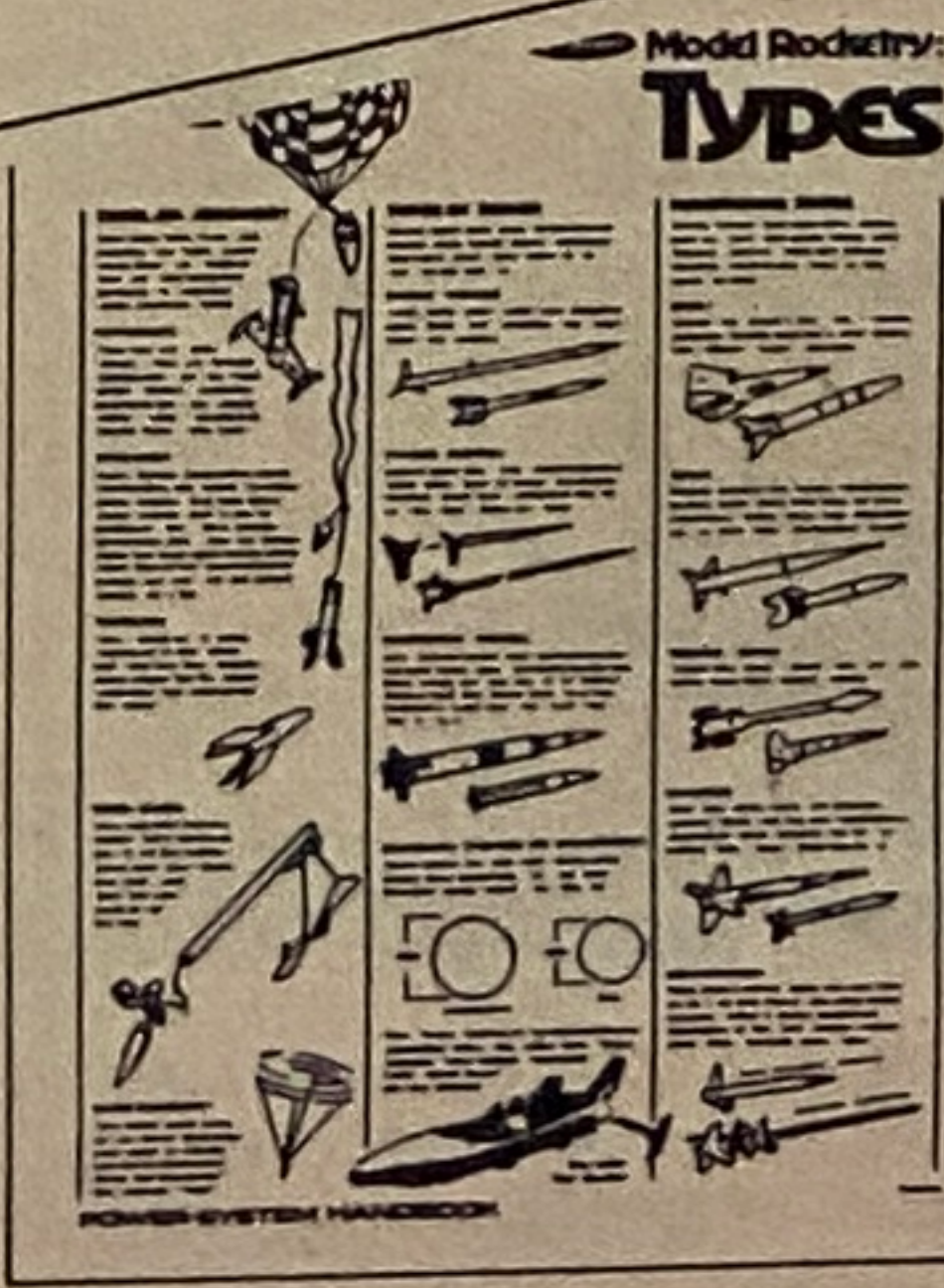
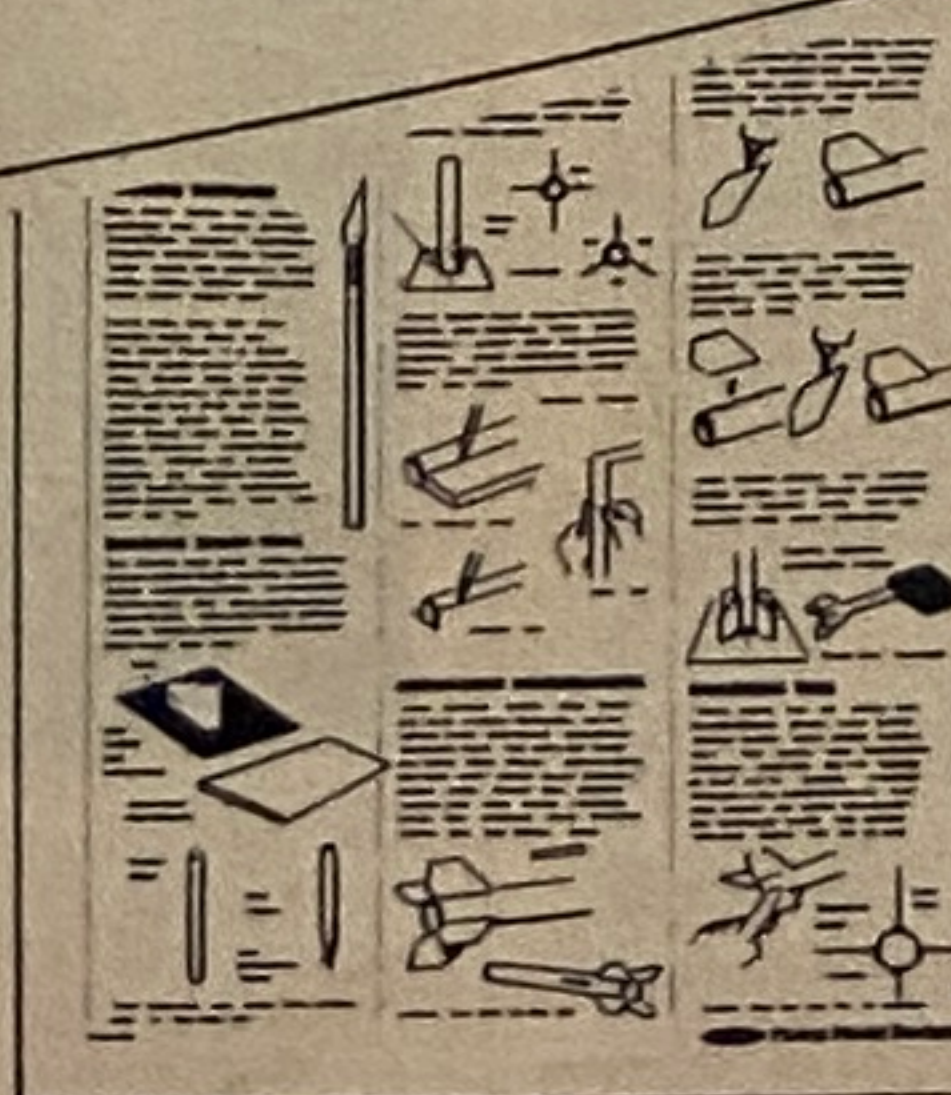
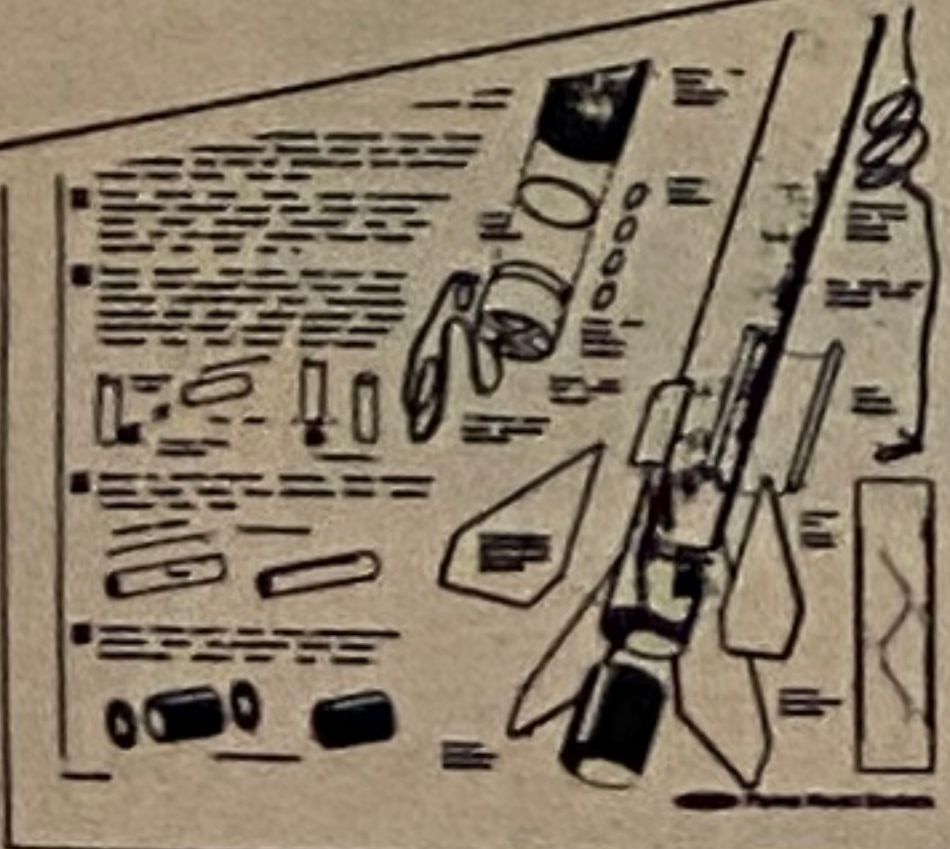
3 One Payload B4-2 16" & 20"

4 Two Cluster (2 ea.) B4-4 C6-5 16" & 20"

Background: Principles



Model Rocketry: Basics



Rocket Club News

NAR news



NARAM-20. The 20th national model rocket championships (NARAM-20) will be held August 7-11, 1978, at San Jose, California. The top model rocketeers from all over the United States will gather for a week of competition and fun. Some of the events in which they will compete include Parachute Duration, Streamer Duration, Altitude, Payload, Egglofting, Boost/glider duration and Scale modeling. The contest offers each participant an opportunity to meet other model rocketeers from around the country. All the major manufacturers send representatives to the NARAM to display their newest products. Anyone can go to NARAM just to watch and make new model rocketry friends. You can learn more information about NARAM-20 by sending a stamped, self-addressed envelope to: NARAM-20; Doug Frost, Contest Director; 1833 Charmeran Ave.; San Jose, California 95124. (No collect calls).

NAR 20th ANNIVERSARY. This year the National Association of Rocketry will celebrate its 20th anniversary. The NAR began as the dream of G. Harry Stine, a former rocketry engineer at White Sands Proving Ground who developed model rocketry as a safe answer to the dangerous rocketry experiments many young people were trying after Sputnik-1 was launched. Many youngsters were injured trying to make rocket motors and Stine, along with Orville Carlisle, developed the model rocket. The National Association of Rocketry was formed shortly thereafter to provide an organization to sponsor contests and regulate standards of model rocketry products. Today, some 20 years later, the NAR is an active organization with over 50 sections (clubs) as well as thousands of individual members around the U.S. Activities sponsored by the NAR include competitions, conventions and seminars held at different times throughout the year in different cities. Membership is open to anyone who is interested. For more information write:

National Association of Rocketry
Dept. C-78
Box 725
New Providence, NJ 07974



THE OLYMPICS OF MODEL ROCKETRY: 1978 Space Modeling World Championships

The 1978 Space Modeling World Championships will be held in September of this year in Bulgaria. While the United States had planned to host this meet, it became clear late last year that it would be difficult for many European nations to send teams to the United States to compete. The Bulgarians' proposal was therefore accepted.

The Space Modeling World Championships is held periodically and is truly the Olympics of model rocketry. Just as athletes prepare for the Olympic games held every four years, so modelers in the United States and across the world wait eagerly to compete for the bronze, silver and gold medals. The competition is fierce, and in past years the U.S. team has had some success in the meets. This meet promises to be the most exciting one yet, because rumor has it that the Russians are planning to compete for the first time.

NAR Education Section Program

NEWS FOR
EDUCATORS
& GROUP
LEADERS

The National Association of Rocketry (NAR) stands ready to serve you with a special model rocketry "youth education program". This program is an important supplement to your hobby youth groups. As an educational aid, the program features:

1. Hobby/Aerospace reference literature
2. "Model Rocketry Suggestion Guide"
3. 9 hobby activity packets
4. Monthly magazine, "Model Rocketeer"
5. Discounts on NAR publications

Reference materials include literature from all major model rocket manufacturers, NASA, the NAR and 20 aerospace education/hobby organizations. Schools and enrolling youth groups receive a copy of the "U.S. Model Rocket Sporting Code" (nationally accepted rules of model rocket competition); they are placed on NASA, manufacturers, and other free aerospace mailing lists. Hobby Activity Packets are sent once each academic month. These contain reference materials plus many, many suggestions for educational uses of model rocketry in the classroom and by student youth groups.

The participation fee is \$20.00 for one academic year (September through June) plus 75¢ per student. When applying to the NAR Education Section Program please include student's names and addresses. Let the NAR serve your hobby educational needs. Let the NAR supplement your student hobby activities. Become an officially chartered Educational Section of the National Association of Rocketry complete with Certificate of Charter and student membership cards. Enroll today in the NAR's "youth education program". Write today to E.S.P., c/o NAR (see "NAR News").

The U.S.A. Team support patch which will be worn by all members of the team during the competition is a symbol which is easily recognizable to other countries — the U.S. Space Shuttle. This is the newest U.S. space program, and the one which most rocketeers from around the world recognize as an American program. Centuri is proud to have designed the patch for the NAR team competing in Bulgaria.

You can own one of these fine patches too. The patches are 3 inches in diameter and feature five colors. This embroidered patch would make a fine addition to your collection or range jacket. ALL PROCEEDS FROM THE SALE OF THIS PATCH WILL GO DIRECTLY TO THE U.S. INTERNATIONAL TEAM FUND! Read all about it at the top of page 3 in the current Centuri catalog. Please do not add it onto our regular order form; it must be ordered separately.



At a previous international competition, Ms. Vera Busova launches a boost-glider design. Photo courtesy of Otakar Saffek of Prague, Czechoslovakia. Otakar, a friend of Centuri for many years, is also Chairman of the FAI Subcommittee on Space Modeling; the organization supervising World Championships.

A photo report on the First Phoenix Winter Nationals; held December 28-30, 1977, in Phoenix, Arizona. Conducted by the Valley of the Sun NAR Section, and sponsored by Centuri, Hobby-Bench stores and others.



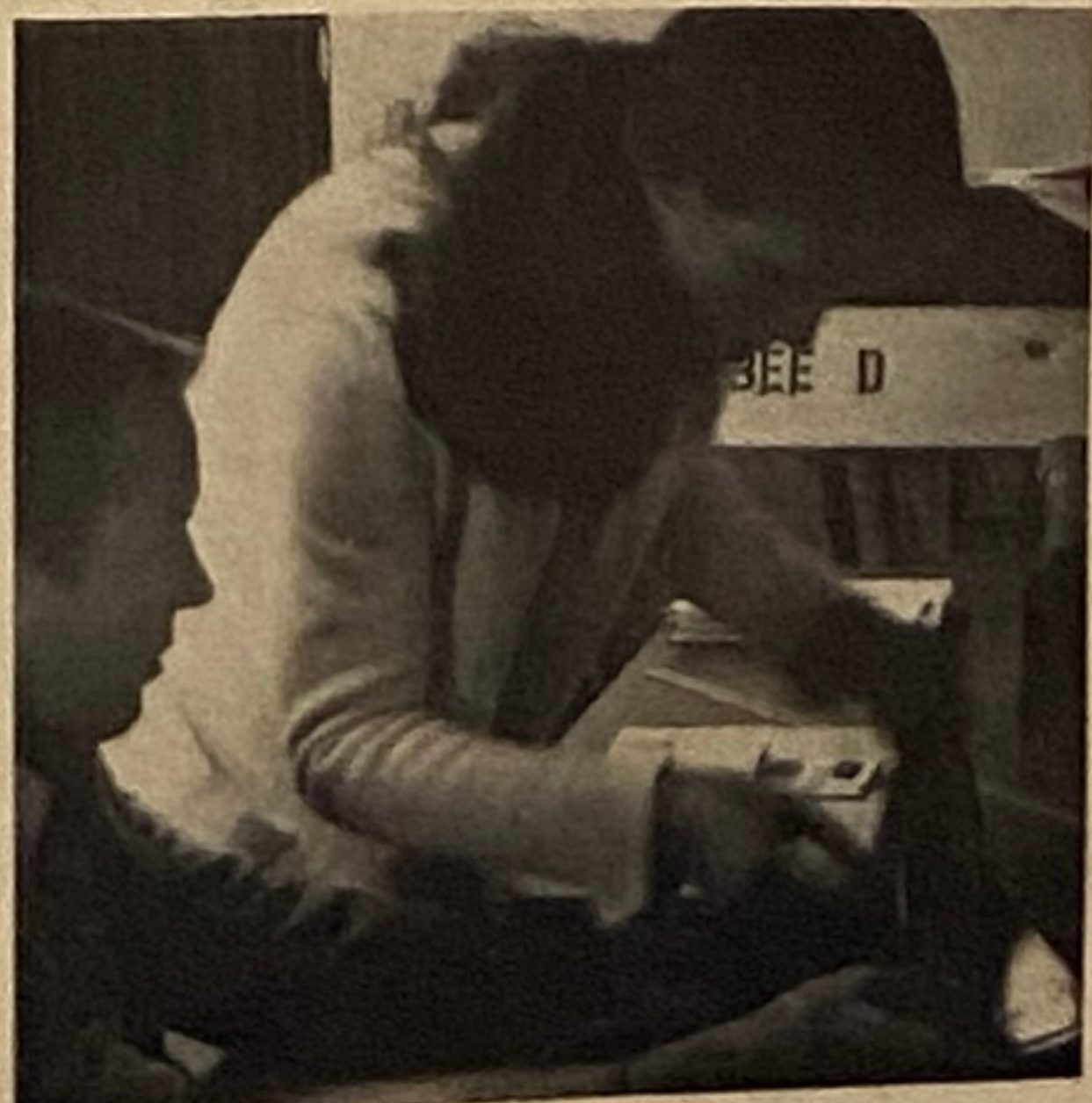
Chief E. T. Cummings of the Phoenix Fire Department launches the first model rocket at NARWIN-1. The rocket was a Phoenix-Bird, one of many products which Centuri donated to the meet. Bill Stine looks on.



G. Harry Stine's entry receives its safety check. Paul Lubertowicz of the sponsoring Val Sun Section of the NAR, and Jim Hartman, of Ohio, assist.



This super sized version of the Centuri Jayhawk scale model kit is displayed by its builder, Doug Frost, of San Jose, California. Doug, incidentally, will be the contest director of the 20th national championships of the NAR (NARAM-20) to be held in August, 1978. (See "NAR News").



Centuri designer Dave Smith assists chief scale judge Ellie Stine in checking the scale entries for the proper dimensions. Scale models are judged on a number of qualities, including adherence to scale, accuracy, workmanship and flight worthiness.

Rocket Clubs

DEMO PROGRAM. Centuri will soon be sponsoring model rocket demonstrations in some areas of the country. Right now Centuri is gathering information about clubs who can do demonstrations. This new program is called "START". The emblem shown below will also be used to represent many other programs yet to come. If you are a member of an experienced, well organized model rocket club that would like to learn about participating in this program, just write to:

Jeff Flygare, Director
"START" Demo Program
Centuri
Box 1988
Phoenix, AZ 85001



START EMBLEM. This new emblem is an exciting message to all who see it that model rocketry is a fun, action hobby. We are using it on many new publications and products. You can use it too, in club newsletters. Centuri has clip art (line drawings that can be easily reproduced by office copiers and other means) available of this emblem. Send Jeff a stamped self-addressed envelope and request a set.

WHAT ARE ROCKET CLUBS? Model rocket clubs are an opportunity for rocketeers to get together and share ideas and fun experiences. Most rocketeers who enjoy the hobby on their own never realize that a club can be the best way to pursue the sport. While you make new friends, you learn from each other. Rocket clubs engage in a variety of activities. These may include building and flying rockets together; holding contests for the best flight in altitude, duration; construction or Research and Development; conducting flight demonstrations at schools, county fairs, athletic event half-times for local rocketry dealers; setting up displays on rocketry and space travel for museums; publishing newsletters to keep members informed, appearing on television and in local newspapers to promote model rocketry, conducting rocketry seminars in schools and youth groups such as the Boy Scouts and 4-H. As you can see, rocket clubs can do a great many things. The possibilities are limited only by your imagination.

HOW TO JOIN A LOCAL ROCKET CLUB.

The best way to get involved in organized model rocketry is to join a model rocket club in your locality. Since the club is already formed, you'll be able to take part in its activities right away. Sometimes it's difficult to find a rocket club because their activities are not always well publicized. The best place to start looking is your local hobby shop. Your hobby retailer knows the modelers who frequent his store and will probably be able to direct you to someone involved with a club.

HOW TO START YOUR OWN CLUB.

Some communities don't have model rocket clubs, and you may have to start your own. Again, the best place to start is your local hobby shop. If you don't have an adult to help you with the club, the retailer may be willing to act as your Senior Advisor who can help arrange for meeting and launch sites. Many people whose help you need are often more willing to help if an adult is involved. Sometimes the retailer is willing to give special discounts to club members. Another organization to contact is the National Association of Rocketry (NAR). There may be an NAR club in your area or NAR members who don't belong to a club but would like to join yours. You may eventually want to have your club become an official chartered Section of the NAR.

One of the first problems you'll encounter is locating a large number of rocketeers in your area. One of the best ways is to put on a small demonstration in your community. First, get together with your rocketry friends and make sure you have all the supplies you'll need. This includes rockets, engines, igniters, wadding, launcher, firing system and a powerful, reliable battery (a car battery is best). Also, a public address system will allow you to let onlookers in on what's going on. Make arrangements for the use of a field (your Senior Advisor can help here). Choose one that is level and accessible, like a school athletic field. If the launch area is near a hobby shop, you may find the owner more receptive to your ideas. Ask the owner to let you put a poster in his window. Maybe he can talk up the demo. It's best to plan at least three weeks ahead so word can get around in time for the demos.

When you fly the demonstration, keep it simple. It should last no more than 15 to 30 minutes, and you should launch only reliable rockets. You should have sheets on hand telling about the club's organizational meeting and have people distribute them during the demonstration.

In the next issue of Rocket Times we'll tell you what to do when you have your first club meeting. If you want more information on model rocket clubs contact Jeff Flygare.

Parts & Goodies

Your current Centuri catalog shows products available at many Centuri dealers, and directly from us by mail-order. The products below are available ONLY by mail-order.

Modeling tools

XK-8 A handy "second knife" for emergency field repairs. Shipping Weight 3 oz. #6684 39¢

KB-8 #6690 Fits No. XK-8 5 for 65¢

XK-1 The best knife and blade for general modeling. Shipping Weight 3 oz. #6680 75¢

XB-11 #6694 Fits No. XK-1 5 for 65¢

POCKET-SIZED DUAL KNIFE SET Contains one light and one medium duty knife with 5 assorted blades for each knife. Packed in a clear plastic case. Shipping Weight 12 oz.

GC-78 #6710 \$2.75

NOTE!
LIMITED
SUPPLY
of all tools.
Order now!

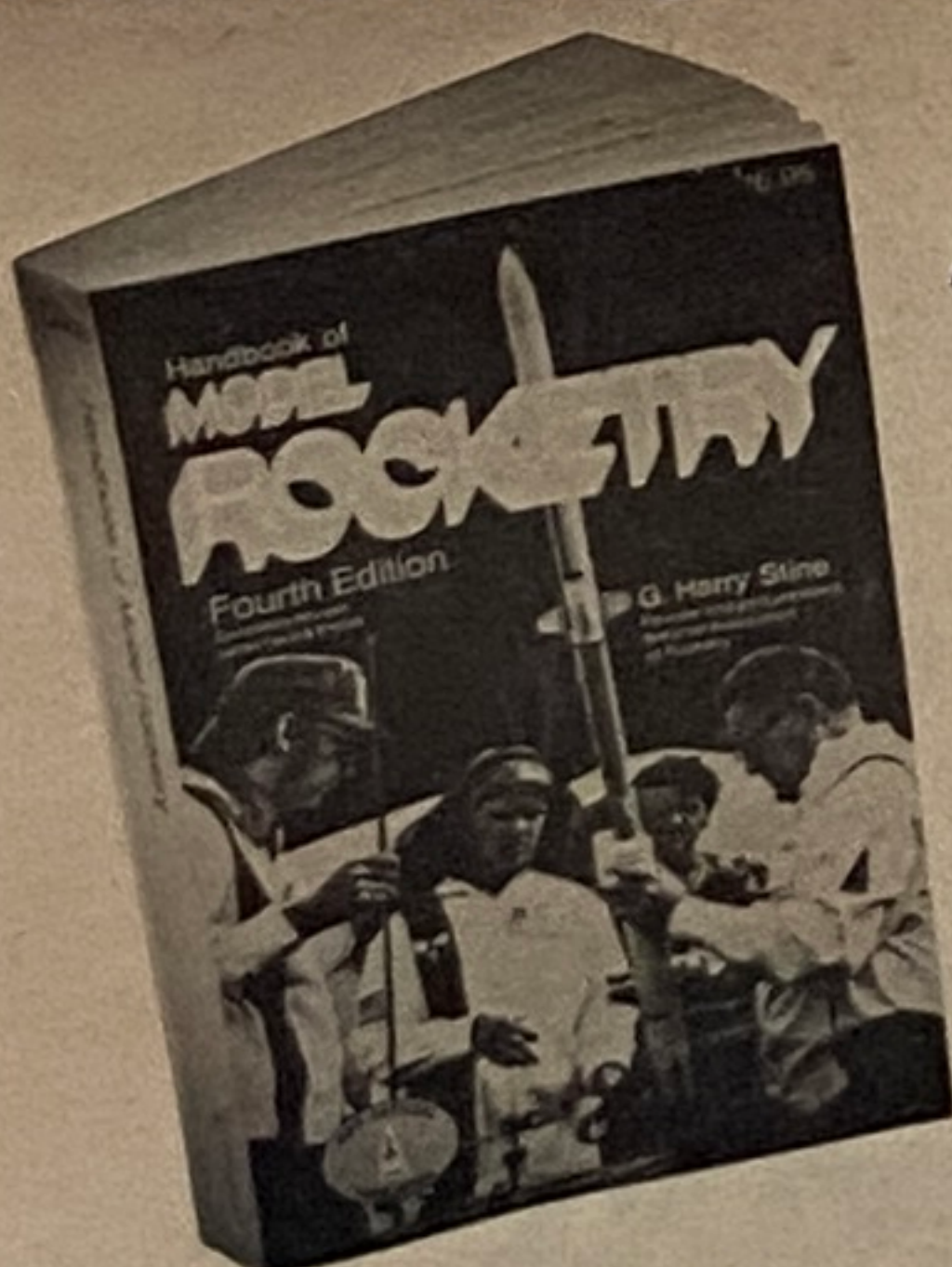
X-ACTO KNIFE CHEST

#82 Set of three modeling knives, light, medium, and heavy duty — all useful in building model rockets. Contains Numbers 1, 2, and 5 knives plus 9 assorted extra blades, packed in a handy, natural finish wood chest.

XC-82 Ship. Wt. 1 1/2 lbs.

#6714 \$5.50

Handbook of Model Rocketry



N.A.R.
Official
Handbook

Fourth Edition: Completely revised by G. HARRY STINE
Founder and past president
National Association of Rocketry

Here it is! The famous "Handbook" long out of print, is back again, now bigger and better than ever. Loaded with hundreds of photos, drawings and explanations of every aspect of model rocketry. 352 fact-filled pages take you from the basics right up to the most advanced concepts. If you want only one book on model rocketry, this should be it. Official handbook of the N.A.R., 6"x9", paperbound.

#5480 Ship. Wt. 1 lb. 8 oz. \$6.95

Tech info

(Also see "Technical Reports" in catalog index.)

Mini-Manual (Grant Boyd)
Model rocketry overview; pocket-sized 8-pages #81915 IP-438 15¢

Apollo Little Joe II Picture History (Niskern)
12 pages #81414 IP-4 \$1.00

Apollo Saturn Picture History (Niskern)
8 pages #81434 IP-270 75¢

Model Rocket Lifting Bodies (Larry Brown)
2 pages #81902 IP-469 15¢

Reliable Cluster Ignition
8 pages #81905 TIR-52 35¢

Multi-Staging Principles (Grant Boyd)
2 pages #81901 IP-448 15¢

Air frame

(Also see "Body Tubes" in catalog index)

Prod. No.	Desc.	Size	Length	Price
BALSA REDUCERS				
70106	BR-78	#7 to #8	.50"	35¢
70112	BR-716	#7 to #16	2.00"	95¢
70116	BR-813	#8 to #13	1.70"	75¢

BODY TUBES

31018	ST-56	#5	6"	15¢
31020	ST-512	#5	12"	25¢
31038	ST-73	#7	3"	15¢
31060	ST-79	#7	9"	20¢
31061	ST-712	#7	12"	25¢
31086	ST-83	#8	3"	15¢
31088	ST-88	#8	8"	25¢
31114	ST-812	#8	12"	30¢
31136	ST-108	#10	8"	25¢
31140	ST-1010	#10	10.5"	30¢
31182	ST-133	#13	3"	15¢
31188	ST-138	#13	8"	40¢
31192	ST-1313	#13	13.5"	50¢
31250	ST-1612	#16	12.8"	60¢
31272	ST-205	#20	5"	30¢
31278	ST-2013	#20	13"	75¢

CLEAR PLASTIC TUBING

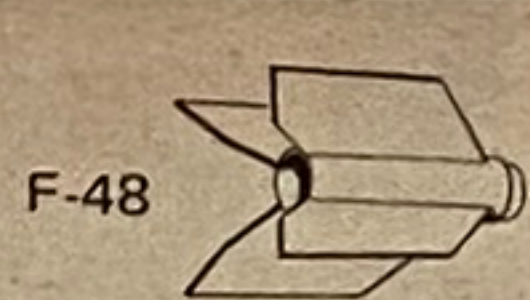
30800	CPT-71	#7	1.87"	10¢
30804	CPT-73	#7	3.25"	25¢
30806	CPT-78	#7	8"	30¢
30810	CPT-82	#8	2.5"	15¢
30816	CPT-811	#8	11.25"	30¢
30834	CPT-1010	#10	10"	35¢
30836	CPT-1018	#10	18"	65¢
30842	CPT-136	#13	6"	50¢
30846	CPT-1312	#13	12"	60¢
30850	CPT-1318	#13	18"	70¢
30830	CPT-102	#10	2"	20¢

BALSA TUBING CONNECTORS

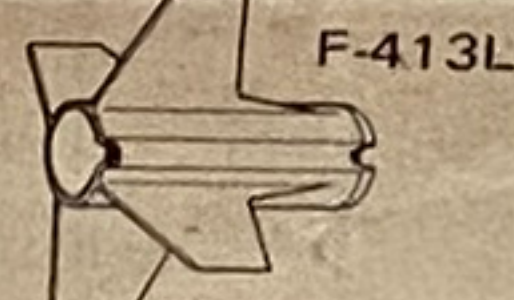
70975	BTC-5	#5	.75"	25¢
70987	BTC-20	#20	1.75"	85¢

PLASTIC FIN UNIT

34062	F-48	#8	3.7"	\$1.00
5467	F-413L	#13	3.7"	\$1.50



Used in:
Screaming Eagle



Used in:
Argus, Phoenix Bird

Nose cones

(Also see "Nose Cones" in catalog index)

BALSA NOSE CONES

Prod. No.	Desc.	Size	Length	Price
70750	BC-50	#5	1.6"	25¢
70752	BC-52	#5	1.6"	30¢
70772	BC-72	#7	1.9"	45¢
70776	BC-76	#7	3.1"	45¢

70807	BC-107	#10	5.3"	85¢
70830	BC-130	#13	1.9"	75¢
70860	BC-160	#16	2.5"	75¢

PLASTIC NOSE CONES

72054	PNC-55	#5	0.5"	25¢
72071	PNC-71	#7	1"	25¢
72165	PNC-165	#16	5.4"	\$1.20

BONUS: COCKPIT

Molded right into the cone.

5466 PNC-136 #13 6.4" \$1.50

BONUS: CONNECTOR

Joins #13 tubes. Use this cone with F-413L fin unit, #13 tubes and engine mount for super quick rocket building!

Capsules

APOLLO CAPSULE KIT

Plastic tower & capsule; for replacement on Saturn 1B & Saturn V only. 4.8" lgth.

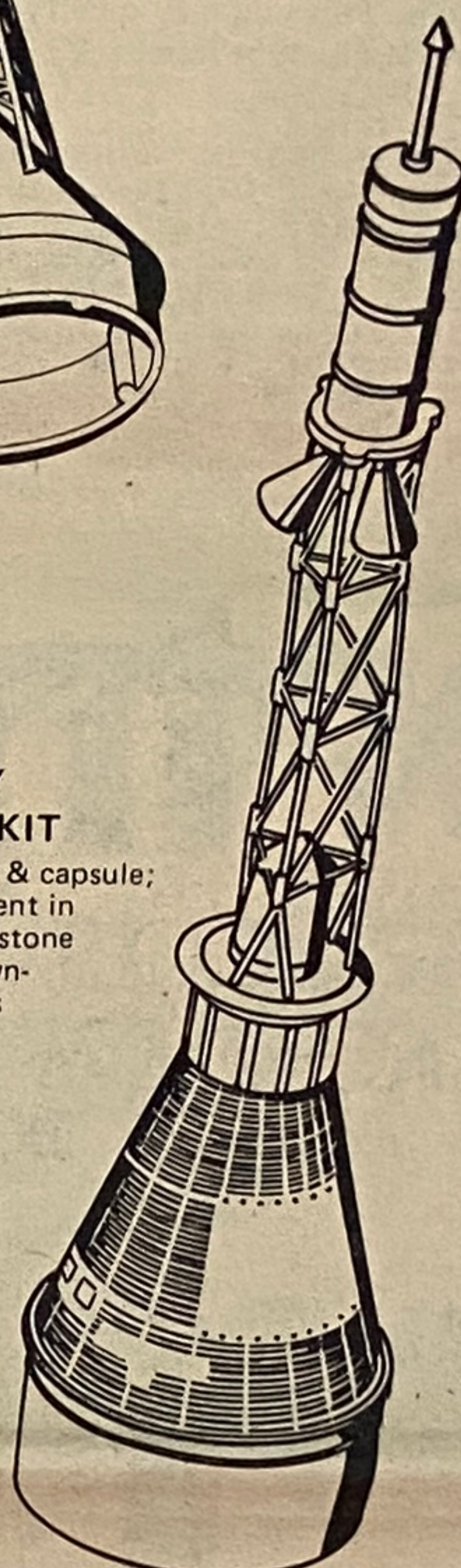
#34090
AP-100
\$1.50



MERCURY CAPSULE KIT

Plastic tower & capsule; for replacement in Mercury Redstone or use in "own-designs". Fits #20 tubes. Includes instructions. 8.5" lgth.

#5477
MR-36
\$2.00



Finishing supplies

Other useful supplies are available at hobby stores. Examples: Spray paint, plastic glue, contact cement, withhold glue (best for rockets).

BALSA FILLERCOAT

The first step to getting that smooth, glossy finish on your rockets. Fills in and seals balsa grain in fins and nose cones before applying paint. Simply brush on, allow to dry, and sand lightly with sandpaper. (2 or more coats recommended). Shipping Weight 4 oz.



#6610 MF-10 50¢
#6615 DT-43 1 oz. Thinner & Brush Cleaner 50¢

WHITE GLUE

Ideal for field repairs, with tremendous holding power. Ideal for assembling and attaching fins, engine mounts, paper reducers, etc. Adheres to paper, balsa wood and fabric. Dries clear. Comes in handy, unbreakable plastic tube with applicator spout. Shipping Weight 5 oz.



#6600 GL-40 50¢

PAINT BRUSHES

Just right for applying fillercoat and brush-on dope to your model rockets. Top quality camel hair brushes mounted in metal ferrules with wood handles. Shipping Weight 2 oz. each.



#6660 PB-20 1/4" wide brush 40¢
#6662 PB-25 1/2" wide brush 70¢

FLAMEPROOF SOLUTION

Prevents burning of tail fins, engine mounts, and other parts exposed to hot exhaust gases. Brush transparent solution on full strength, just like paint. Especially useful for swept fins. Comes in handy plastic bottle. Shipping Weight 5 oz.



#6640 FP-13 2 ounce bottle 95¢

Miscellaneous

SCREW EYES Heavy duty screw eyes for use on large balsa nose cones and payload capsules. Bright-plated steel with coarse thread. Net Weight 0.1 oz. Shipping Weight 1 oz.

#5952 SE-20 Package of 3 (large) 25¢
#5948 SE-10 Package of 6 (small) 20¢

SHROUD LINE Strong, glazed finish, light weight cord (only .022" dia.). Perfect for shroud lines on custom parachutes. Sufficient line for 20 to 30 parachutes. Ship. Wt. 4 oz.

#5920 SL-70 60¢

MYLAR LAUNCHING LUGS

Fantastic light weight lugs, with super strength and hi-gloss finish. Attach to rocket body with glue. Used to guide rocket along rods up to 3/16" in diameter. 0.200" I.D. Ship. Wt. 1 oz.

#38166 LL-12 2" Long 3/20¢
#38167 LL-13 3" Long 3/20¢

BALSA FIN MATERIAL Select grain, smooth sanded balsa sheet stock. Perfect material for rockets. Available 3" x 12" in various thickness. Shipping Weight 12 oz. each set.

#6400 BFM-8 1/16" 3 for 95¢
#6402 BFM-10 3/32" 3 for \$1.25
#6404 BFM-12 1/8" 3 for \$1.50

NICHROME IGNITER WIRE

Nickel-chromium resistance wire to make igniter for model rocket engines. Glows red hot when connected to a battery current source. About 2" required for each launch. Shipping Weight, 2 ozs.

#5958 EW-32A 180" 95¢

HEAVY DUTY LAUNCH ROD

Extra-strong, 2-piece launch rod, 3/16" in diameter. Designed for heavy-duty launching from the Centuri Power Tower, or launcher of your design. Highly recommended for launching of cluster-power rockets such as Saturn V, and Saturn 1B.

#5803 H.D. 3/16" Rod \$1.75

Decals

(Also see "Decals" in catalog index.)

3/8" LETTERS OR NUMBERS

Easy-to-apply decals of NASA style characters on 3 1/2" x 6" sheet. Use as insignia markings, identification codes, NAR numbers, etc. "Letter" decal has 68 letters, "numbers" decal contains six sets 0 through 9. Specify color: Red or Black.

#36609 DC-7 3/8" Letters (Red) 25¢ each
#36610 DC-7 3/8" Letters (Black)
#36611 DC-8 3/8" Numbers (Red)
#36612 DC-8 3/8" Numbers (Black)

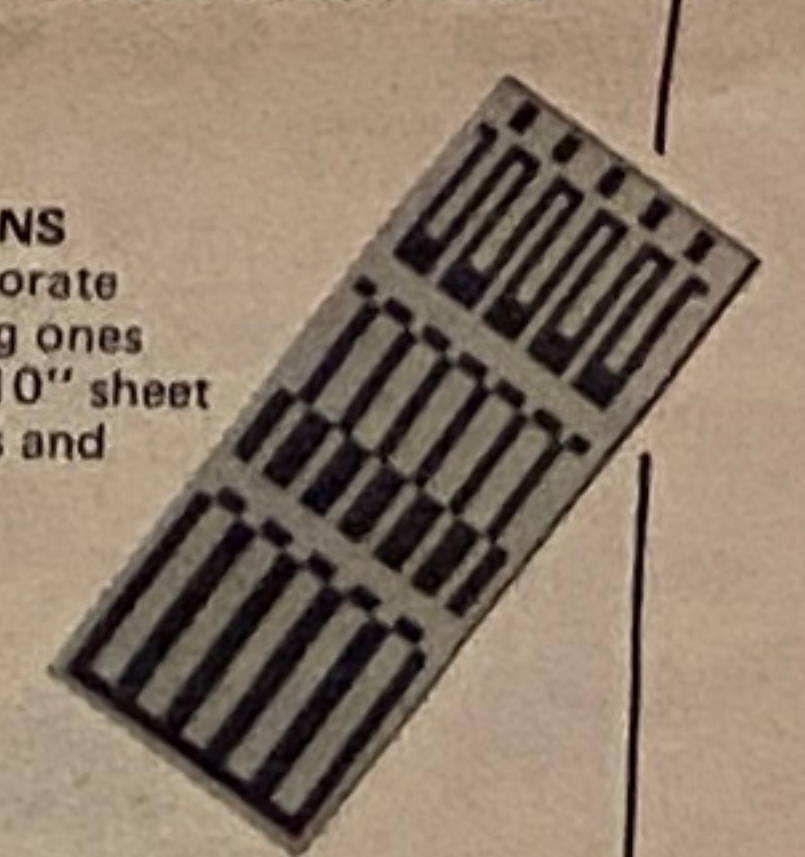
1/4" LETTERS AND NUMBERS

Several sets of letters and numbers on a single decal sheet. The generous 3 1/2" x 6" sheet contains over 120 characters and miscellaneous symbols. Specify color: Red or Black.

#36604 DC-1 Letters & Numbers (Red) 25¢
#36605 DC-1 Letters & Numbers (Black) each

CENTURI ROLL PATTERNS

Terrific for all models. Decorate your rockets just like the big ones at the "Cape". Giant 4" x 10" sheet containing four roll patterns and three girth bands. Just the right size for Centuri Body Tubes. See models in catalog for roll patterns in use. Available in Red or Black.



#36620 DC-30 (Red) For #7 Diam. 50¢ each

#36621 DC-30 (Black) For #7 Diam. 50¢ each

#36622 DC-32 (Red) For #8 Diam. 50¢ each

#36623 DC-32 (Black) For #8 Diam. 50¢ each

#36624 DC-31 (Red) For #10 Diam. 50¢ each

#36625 DC-31 (Black) For #10 Diam. 50¢ each

CHROME AND GOLD PLATED MYLAR

Large 4" x 10" sheets you can cut apart to form bright circular bands or roll patterns. Or, you can completely chrome or gold plate your entire backing sticks to any surface. Extremely lightweight.

#36626 DC-33 Chrome Plated 50¢ each
#36628 DC-34 Gold Plated

SATISFACTION GUARANTEED! REPLACEMENT OR MONEY BACK

Centuri

Mail Order

Centuri Order Form

Centuri
P.O. Box 1988
Phoenix, Arizona 85001
CODE 301B

Fill out carefully; print only one character in each space. Abbreviate if necessary.

Name

Address

City State Zip

Is this your first order to Centuri? Yes ☐ No ☐ Have you ordered within the last year? Yes ☐ No ☐ Are you already an Aerospace Team Member? Yes ☐ No ☐

If you have moved since your last order, print old address here:

Product No.	How Many	Product Name/Description	Price ea, pkg, etc.	Total
1	5 4 6 0	Aerospace Team membership packet: \$1.50		
2		1978 Space Modeling World Champion Patch. (Must be ordered separately as explained in ad.)		
3	5 1 3 8	1/45 Little Joe II (\$12.95)		
4				
5				
6				
7				
8				
9				
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11				
12				
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23				
24				
25				

PLEASE PRINT PLAINLY IN INK

If additional space is needed, continue on a separate sheet of plain paper. A new order form and envelope will be sent with your order.

Do not write in this space. (For Centuri use only).

CK-----
CR-----
MO-----
ST-----
CS-----

Total for merchandise determines bonus offer.	
State sales tax 4% (Arizona residents only).	
Balance due to Centuri from previous order.	
Amount for handling required on all orders.	8 5
CANADIAN orders require \$1.00 more for handling.	
Additional amount for air mail/priority mail.	
Total amount enclosed.	

How to mail order

TAKE YOUR TIME Fill out the order form as clearly as possible. Example: If you want a box of three A8-3 engines, print 5560 in the "Product No." column, and 1 bx, in the "How Many" column. Print Box of A8-3 engines in the "Description" column and multiply "How Many" by "Price" to get "Total."

Product No.	How Many	Product Name/Description	Price ea, pkg, etc.	Total
5560	1bx	BOX OF A8-3 ENGINES	1.60	1.60
5564	2bx	BOX OF B4-2 ENGINES	1.70	3.40
36607	1	DC-3 MILITARY INSIGNIAS	.90	.90
5200	1	POWER SYSTEM OUTFIT	25.00	25.00
5854	3	CP-12 CHUTE PAKS	.75	2.25
81903	1	TIR-30 STABILITY...	1.00	1.00

CENTURI PAYS THE POSTAGE

Centuri will ship your order postpaid anywhere in the U.S. (including territories, possessions, commonwealths, APO&FPO) by regular surface parcel post or private carriers such as United Parcel. Be sure to add the 85¢ handling charge in your order total. Arizona residents must pay 4% sales tax. For extra fast delivery, see airmail information. Orders to Canada require a \$1.00 handling fee in addition to the regular 85¢ charge. Orders to other foreign countries require special handling please write for information.

PAYMENT OF YOUR ORDER

Full payment must be included with your order. Please use Check or Money Order. No C.O.D.'s please. We do not recommend sending cash or stamps. Include sufficient payment; any over-payment will be promptly refunded. We cannot be responsible for coins, currency, or orders lost in mail. Prices are subject to change without notice.

MULTIPLE SHIPMENTS

Because of Postal Regulations, your order may be shipped in more than one parcel. They often become separated in transit and may not all arrive together. However, all should arrive within a few days of each other.

AIR MAIL—IF YOU PAY FOR IT

See chart below. These amounts are the difference between surface delivery (which Centuri pays) and the priority mail rates. To use this chart, total the "shipping weights" of the items ordered and send the amount shown under the total weight for your order. Any excess payment will be refunded. Send 6¢ per ounce for orders 13 ounces or less.

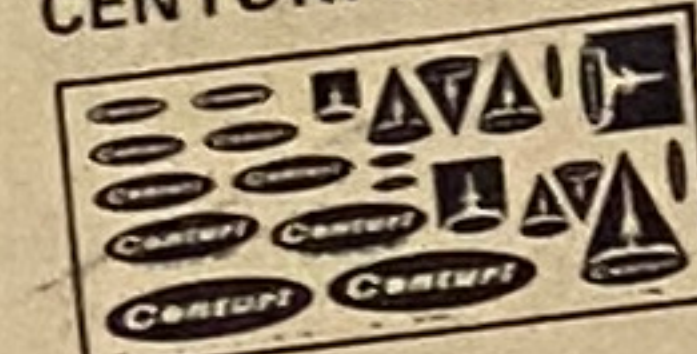
WEIGHT IN POUNDS (but not over)

1 lb. \$.73	2 lb. \$.98	3 lb. \$ 1.35	4 lb. \$ 1.67	5 lb. \$ 1.94
6 lb. \$ 2.20	7 lb. \$ 2.46	8 lb. \$ 2.72	9 lb. \$ 2.98	10 lb. \$ 3.24

NOTICE OF RESPONSIBILITY

Our model rocketry products are intended for experimental and educational usage. You are cautioned to exercise the utmost care in the use of our products. We do not accept any responsibility for accidents. No warranty either expressed or implied is made regarding the reliability or performance of any product which may malfunction or be found defective. It is assumed that those purchasing materials from this catalog will use them in accordance with all laws applying. Model Rocketry products are recommended for ages 10 to adult. Adult supervision is suggested for those under 12 years.

EARN A FREE CENTURI EMBLEM DECAL!



(see "PARTS" section of catalog for description)



OR, EARN A FREE COPY OF "Rocketry Exploration" POWER-SYSTEM HANDBOOK (see catalog for desc.)

Do your friends & self a favor

Do you have some friends ages 10 or older who are interested in model rocketry? Send us their names and addresses WITH YOUR NEXT ORDER, and we will include a reward!

Check one: ☐ Here's 2 friends. Send me a free decal (#36603).
☐ Here's 4 friends. Send me P.S. Handbook (#81527)

SEND A FREE CATALOG TO:

① Name
Address
City
State Zip

② Name
Address
City
State Zip

③ Name
Address
City
State Zip

④ Name
Address
City
State Zip

RULES: 1. They must be age 10 or older.
2. They must be people who have not requested a catalog from us before.
3. They can't have the same address as you, or as each other.
4. This offer valid only when you order.

FREE Bonus Offer

★ Earn free Centuri products!

★ Cut out bonus offer along with order form above.

★ Total your order. Only merchandise counts; not handling fee, etc.

★ Circle the free bonus of your choice. Don't exceed "total for merchandise."

★ Example: \$12 order earns one bonus in the \$12 block, or two bonuses in the \$6 block, but it does not earn both the \$6 and \$12 bonuses.

★ Do not mix different past Bonus Offers on the same order.

Bonus Offers are redeemable only by mail-ordering directly from Centuri. Not available in stores. Our shipping department will make substitutions of equal or greater value when necessary.

DISCONTINUED KIT "SWEEP-UP"

1/2 PRICE

Your order must total \$10.00 or more to qualify. Enter on order form and enclose this coupon.
KIT FEATURES: 17.5" long chute, skill level 3, huge nose cone, large decal sheet, pre-cut balsa fins.

PROD. NO. 5067 QUASAR KIT \$2.47

WAS \$4.95
NOW ONLY \$2.47
While supplies last!

MY ORDER TOTAL IS \$ Total for merchandise PLEASE SEND MY FREE:

FREE Satellite 62SL Kit \$1.25 value with your \$6.00 order Choose only one Moonraker Kit \$1.25 value	FREE Sky Devil Kit \$1.75 value with your \$8.50 order Choose only one B6-4 Engines \$1.70 value	FREE Vector V Kit \$2.75 value with your \$12.00 order Choose only one Bandito Kit \$2.50 value
FREE Nomad Kit \$4.00 value with your \$17.00 order Choose only one F-4 Phantom Kit \$4.50 value	FREE Long Tom Kit \$6.00 value with your \$22.00 order Choose only one Power-Tower \$5.50 value	FREE U.F.O. Invader Kit \$9.00 value with your \$33.00 order Choose only one Space 1999 Eagle Transporter Kit \$9.00 value

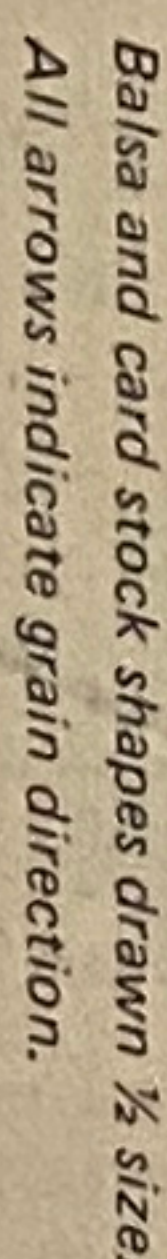
SWEEP-UPS are obsolete products, in perfectly fine shape, but no longer carried in our mail order or retail catalogs. We sell them at bargain prices to clear out our warehouse and make room for new products. Special sales are bargain-priced regular products which we simply have too many of in our inventory.

SWEEP-UPS & Special Sales

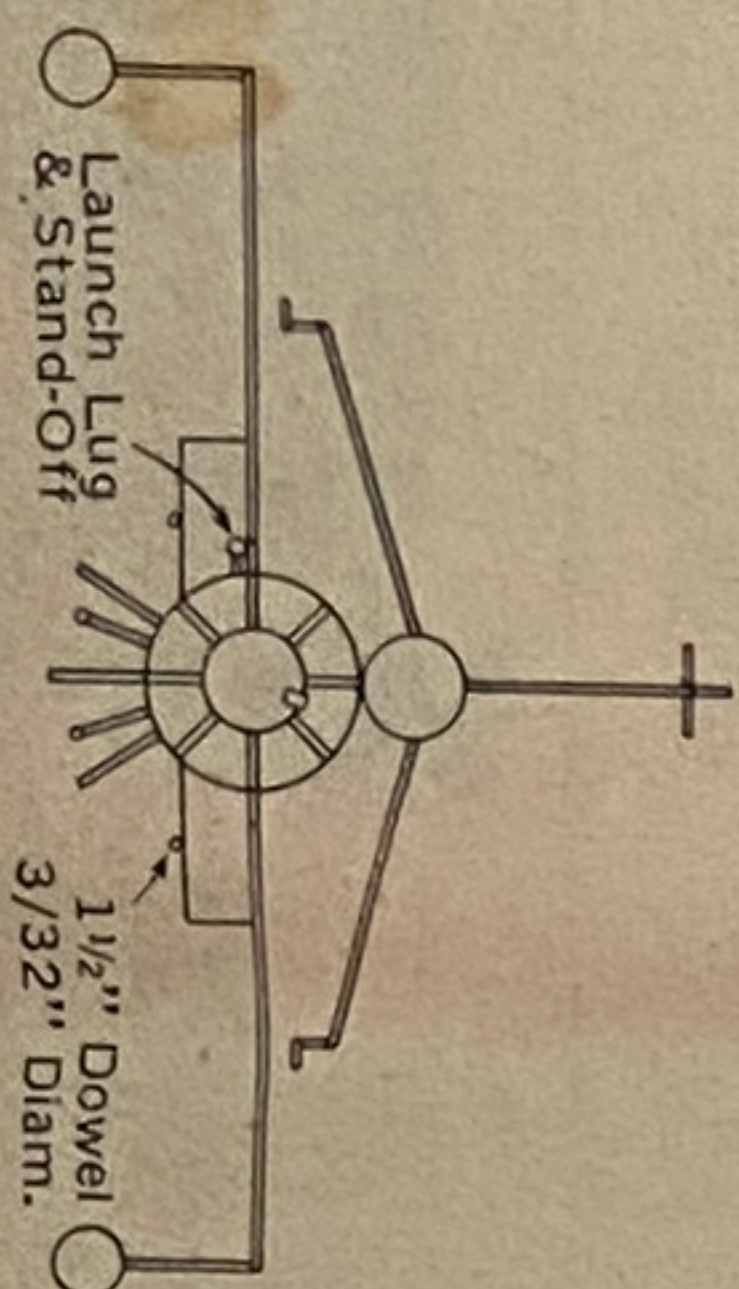
Want to know about more sweep-ups, sales and bonus offers? We advertise new ones in sheets packed into all mail-orders we ship out. Place an order today and learn about the latest offers!

1978 SPRING/SUMMER
SUPPLEMENT TO
CENTURI CATALOG #781-R

EM-16 Engine Mount
BFM-10 3/32" thick balsa.
2 sheets
CP-20 Chute
SC-18 Shock Cord
SCF-1 Shock Cord Fastener
LL-3 2 pieces 1/2" in length
Card Stock
Dowels



This is an unusual design because it looks a little like our SST Shuttle. But the rocket on the back of the main rocket doesn't come off and glide back like the Shuttle. The colors of the original were:



Prize

The winner will receive a prize of his or her choice . . . any ONE product from the current Centuri catalog! It can be any model/rocket product we make . . . right up to the fantastic Saturn V kit!

1. Entries must consist of a photograph of the model, and a drawing which includes a parts list, and your name and address.
2. Entries must be flight worthy and not copies of kit designs produced by model rocket manufacturing companies.
3. Entries become the property of Centuri and can not be returned.
4. Employees of model rocket companies and their families are not eligible.
5. Entries judged on originality, neatness, practicality and completeness.
6. Do not send the actual model.
7. Send as many DIFFERENT entries as you like, but no duplicates.
8. There is no deadline. A winner is selected just before each issue of Rocket Times goes to press, and notified by mail.
9. Specify which prize you want if you win.

**DON'T FORGET
THE PHOTO!**

- Take your time to do a good job.
 - Use your imagination.
 - Don't copy existing designs.
 - Try some really experimental ideas.
 - Avoid large fins too far forward.
 - Choose from available parts.
- Make your entry clear and readable.

Box 1988, Phoenix, Arizona 85001

YOUR NEW FLYING MODEL ROCKET
CATALOG
ENCLOSED IN THIS "ROCKET TIMES"

Just pull the catalog
from the centerspread
of the Rocket Times.
Mail order information
is on page G
of Rocket Times.

5F
PHILIP MIKESELL
5707 COTNE RD
ELIDA

OH 45807

BULK RATE
U.S. POSTAGE PAID
Centuri Engineering Co.

★ EXPANDED CLUB
INFORMATION PAGE

For all model rocket clubs, two full pages on club activities, the NAR and Group Programs!

★ PHOTO AND CARTOON CONTEST WINNERS

The first model rocket kit: Plans to help you build a replica! See page A.

★ 1978 SPACE MODELING
WORLD CHAMPIONSHIPS

The Olympics of model rocketry, and you can get your own USA Team support patch! See page D.

★ MODEL ROCKETRY'S
20th ANNIVERSARY

See page A.

Rocket Times

1978
SPRING/SUMMER

SUPPLEMENT TO
CENTURI CATALOG #781-R

CLOSE ENCOUNTERS